

TAPR Digital Signal Processing Special Interest Group Archive, September 1994 through December 1995

September 1994 through December 1995

TAPR's forum for digital signal processing in amateur radio and digital communications, including DSP processors and development boards, algorithms, modems, software, hardware, and projects such as the TAPR/AMSAT DSP-93.

This volume contains 14 original monthly files and 1,863 messages, arranged chronologically. The PDF is a readable access copy: MIME transfer encodings are decoded, HTML bodies are converted to plain text, and non-text attachments are represented by descriptive notes. The raw source text is supplied separately with the Internet Archive item.

Month	Messages	Original source file
1994-09	5	dsp.9409
1994-12	38	dsp.9412
1995-01	238	dsp.9501
1995-02	153	dsp.9502
1995-03	121	dsp.9503
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1995-05	137	dsp.9505
1995-06	173	dsp.9506
1995-07	270	dsp.9507
1995-08	300	dsp.9508
1995-09	103	dsp.9509
1995-10	99	dsp.9510
1995-11	86	dsp.9511
1995-12	52	dsp.9512

September 1994

Original source file: dsp.9409

Source: http://ftp.tapr.org/tapr_history/SIG_Archives/dpsig/mail_archive/dsp.9409

1. TCET Down

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 7 Sep 1994 18:58:08 -0500 (CDT)
To: dsp-93@tapr.org
Message-ID: <199409072358.SAA20092@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

TCET is down probably until tomorrow sometime. The DSP-93 group on TAPR.ORG is setup and provides nearly instant turn around (every minute or so).

I'll repost when TCET is available again, but we could probably switch over permantly to the TAPR.ORG list if everyone wants to.

DSP-93@TAPR.ORG

Greg

2. Lets change

From: Roy Welch <rdw@crl.com>
Date: Wed, 7 Sep 1994 17:20:37 -0700 (PDT)
To: DSP93 <dsp-93@tapr.org>
Message-ID: <Pine.3.87.9409071737.A22802-0100000@crl.crl.com>
Rendered body type: text/plain

Bob, I'm ready, lets change.
73, Roy

3. (no subject)

From: "Paul Beckmann" <paul@eye.psych.umn.edu>
Date: Thu, 8 Sep 94 12:47:11 CDT
To: DSP-93@TAPR.ORG,
paul@eye.psych.umn.edu
Message-ID: <9409081747.AA28150@eye.psych.umn.edu>
Rendered body type: text/plain

Hi, Gang!

Here are the results of my runs of MEASGAIN (10 passes) with the -dTONES option. I've summarized the mean and standard deviation of the reported values in ascending gain values. The board still has the original gain resistors. Hope this is of value. (MEASGAIN ran first time. The unit did not have much of a warm-up period. The noise in the values may be partly electrical due to no box and the DSP93 sitting on top of my ACER in front of the monitor!)

-Paul
WA0RSE

6500	mean	sd
	3	0.00
	5.6	0.52
	18.5	0.53
	195	1.83
	273.7	2.21
	13711.6	76.82
	29945.4	146.20
	30298	152.81

6000		
	4	0.00
	7	0.00
	21	0.00
	247.7	1.49
	350.1	1.29
	18008.7	42.86
	34745.7	23.77
	35332.1	15.54

5500		
	3.6	0.52
	6	0.00
	18.7	0.48
	247	2.54

	351.3	2.16
	18731.3	112.79
	35855.3	169.19
	36332.6	181.79
5000		
	3	0.00
	5	0.00
	15.4	0.52
	231.1	0.88
	330.6	1.58
	18356.6	46.93
	35276.4	107.41
	35513.1	102.09
4500		
	3	0.00
	5	0.00
	13.8	0.42
	230.3	0.95
	335.1	1.37
	18994.1	66.88
	35581.4	132.58
	35922.3	153.38
4000		
	2.2	0.42
	4.3	0.48
	12	0.00
	227.2	1.69
	332.7	3.33
	19696.2	113.95
	35784.1	100.81
	35966.8	265.85
3500		
	2	0.00
	4	0.00
	10	0.00
	222.2	0.79
	324	1.15
	19646.2	18.49
	34890.8	18.40
	35318.8	38.93
3000		
	2.3	0.48
	4	0.00
	9	0.00
	216.4	1.78
	324.1	1.52
	19944.7	142.61
	34731.2	375.57
	35530.2	230.61
2500		
	2	0.00
	3.8	0.42
	8	0.00
	222.3	1.34
	329.4	1.65
	20979.4	65.46
	35151.7	121.43
	35617.8	119.84
2000		
	2	0.00
	3	0.00
	7.1	0.32
	227.4	1.78
	336	2.40
	21970.8	127.55
	38359.5	371.07
	39384.8	659.26
1500		
	2	0.00
	3	0.00
	7	0.00

```

232.4 1.51
349.9 5.15
23514.7 99.56
40003 386.30
39573.9 869.14

1000
2 0.00
3 0.00
7.3 0.48
235.5 4.67
348.2 6.60
23838.7 464.78
40011.5 425.18
42351.9 1562.25

500
2 0.47
2.7 0.48
4.6 0.52
181.4 11.61
289.2 6.00
18276.9 1212.13
33448.9 889.49
35592.7 376.79

```

4. Compiling clues

```

From: "Paul Beckmann" <paul@eye.psych.umn.edu>
Date: Thu, 8 Sep 94 12:49:27 CDT
To: DSP-93@TAPR.ORG,
    paul@eye.psych.umn.edu
Message-ID: <9409081749.AA28177@eye.psych.umn.edu>
Rendered body type: text/plain

```

REPOST

When I attempted an assembly of the MEASGAIN code last night, I found that the ASM.BAT file hurt me rather than helped. The parameter of that batch file allows for entry of the source file name but the "-dTONES" was not accepted. The header of the source file gives instructions which, frankly, do not work. I finally did it the "stupid" way by commanding:

```
tasm -25 -lal -g0 measgain.asm -dTONES
```

(The .bat file ****did**** provide a template so, I guess, it helped some.

I'd like to see the "debug and test" software go out as .obj files with the kits. Then people aren't fighting both the assembly and debug fronts at once. Then a nice tutorial example of how to run the debugger. We are planning on delivering .obj files for all the included filters, etc., right? Plus the source, plus a vector to the shareware compiler.

I will write the debug/test doc as if the .obj files are on the disk. I still desperately need help to lay out what is REALLY being tested by what software. I'll try to use this to provide a test roadmap in the doc as well. Testing and debug software authors: HELP.

--Paul
WA0RSE

5. I'm confused

```

From: Roy Welch <rdw@crl.com>
Date: Sun, 11 Sep 1994 09:08:14 -0700 (PDT)
To: DSP93 <dsp-93@tapr.org>
Message-ID: <Pine.3.87.9409110914.A20738-0100000@crl.crl.com>
Rendered body type: text/plain

```

Re the TAPR 9600 modem and the DSP-93 FSK modems using different encoding. I'm confused now. I can use my TAPR 9600 modem or my G3RUH modem with my TNC200 and copy either the local 9600 terrestrial node or the 9600 satellites. What is different with the DSP-93 FSK modems such that I can copy the satellites and not the local 9600 node?

I was out of pocket yesterday and the day before helping a local school set up for their SAREX QSO with the shuttle. We were able to get 10 kids to talk with Shuttle Commander Dick Richards in the 7.5 minutes we had.

Dick is from the local area.

73, Roy

December 1994

Original source file: dsp.9412

Source: http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9412

1. TAPR/AMSAT DSP-93 Status

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 19 Dec 1994 02:28:43 -0600 (CST)
To: tapr-bb@tapr.org (TAPR-BB mailing), dsp@tapr.org, dsp-93@tapr.org
Message-ID: <199412190828.CAA22849@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

Happy Holidays from TAPR

TAPR/AMSAT DSP-93 shipping

The units will begin shipping today (12/19/94). It is estimated that it will take most of the week to get all orders fully packaged and shipped.

The group DSP-93@TAPR.ORG is for kit building and hardware related questions.

The group DSP@TAPR.ORG should be used for software and programming issues.

To subscribe to these groups:

1. Send e-mail to 'listserv@tapr.org'
2. Subject 'Request'
3. Message body:
 subscribe dsp-93 First_Name Last_Name
 subscribe dsp First_Name Last_Name

If you have any questions, please e-mail me or tapr@tapr.org

The DSP-93 ftp area will be opened after January 1 to handle updates and revisions. Location to be announced.

Cheers - Greg

2. REQUEST FOR INFORMATION

From: GerryP@interlink.net (Gerry Paquette)
Date: Tue, 20 Dec 1994 21:48:21 -0500
To: DSP-93@tapr.org
Message-ID: <9412210240.AA10120@RezoNet.NET>
Rendered body type: text/plain

Hi:

I wonder if you could tell me whether TAPR or someone else plans to set-up a newsgroup or an FTP/WWW site for the DSP-93 project?
Thanks and 73

Gerard (Gerry) Paquette, VE2AW
890 Hudson, St.
McMasterville, QC
CANADA J3G 5C3
Tel: 514-464-0049

3. Re: [DSP-93:7] REQUEST FOR INFORMATION

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 20 Dec 1994 21:32:05 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199412210332.VAA25695@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

A FTP area will be setup sometime the first of the year for updates and other items developed for the DSP-93.

When it happens it will be posted here.

Cheers - Greg

According to Gerry Paquette:

- >
- > Hi:
- >
- > I wonder if you could tell me whether TAPR or someone else plans to set-up a
- > newsgroup or an FTP/WWW site for the DSP-93 project?

> Thanks and 73
>

4. DSP-93 arrived

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 21 Dec 1994 06:13:55 GMT
To: DSP-93@TAPR.ORG
Message-ID: <26893694.6532539@acd.acd.org>
Rendered body type: text/plain

The DSP-93 kit arrived today Dec 20 by UPS. It's time for me to heat up the IRON.

This is one very impressive kit. The check off boxes remind my of the old Heathkit days.

I have a Macintosh and I had no problem using Apple File Exchange to read the two computer disks into my computer. Mac PC Exchange did not work on these low density disks so use Apple File Exchange.

Lots to read and I just wanted to let people know the kits are getting to Dallas TX.

73,

Bob KC5EJK

5. Upcoming DSP-93 Interface Articles

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 21 Dec 1994 02:32:23 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199412210832.CAA10963@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

I thought I would post the text of the upcoming DSP-93 Windows and Macintosh interface articles. If this information was not in your kit, then it is being shipped with the followup shipment first of January.

Enjoy. greg

User and Development Interfaces for the DSP-93

The following two articles describe the D93WE (Windows Environment) and DSP-93Control (Macintosh Environment) programs for the TAPR/AMSAT DSP-93 digital signal processing unit. D93WE is written by Tom McDermott, N5EG and DSP93Control is written by Ron Parsons, W5RKN. Both of these applications bring the full power of the DSP-93 to your computer's desktop. TAPR and AMSAT would like to thank both Ron and Tom for their time and effort in developing these applications.

D93WE - a Windows Development Environment for the TAPR/AMSAT DSP-93

Tom McDermott, N5EG

This article describes the D93WE (Dsp-93 Windows Environment) program, a windows development environment for the TAPR/AMSAT DSP-93 digital signal processing unit. The purpose of the development environment is to provide the following features in an easy-to-use point-and-click Windows interface:

- * Download of already-assembled software to the DSP-93
- * Fast, efficient Edit/Assemble/Download cycle for development of TMS320C25 assembly programs
- * Various utility programs, such as oscilloscope,

function generator, and spectrum analyzer

* Integrated communications terminal that operates at 19Kbaud, including Cut, Copy, Paste, Clear, Search, etc.

The program runs on a PC or compatible computer running Windows 3.1. It is written in Borland C++ version 3.1, and uses the Object Windows Library, version 1.0. The library is an object-oriented interface to Windows, and provides a clean, robust implementation. Several design issues arose with the choice of the OWL interface to Windows, but the speed of development effort and the solidness of the application are attributable to the choice of this package. The total software package is about 4,000 non-comment source lines (NCSL) of code, including C++, TMS assembly, and resource files. The D93WE package is provided along with the DSP-93 unit by TAPR.

DSP-93 Hardware

The DSP-93 was developed by Bob Strickland, N5BRG. It is a powerful, general purpose DSP board set based on the TI TMS320C25 processor. Several analog interface boards have been planned, the one currently available is a voice-frequency board optimized for audio-bandwidth signal processing, and optimized for interconnection to various radios at audio frequency. This analog board is based on the Texas Instruments TLC32044 converter (CODEC) IC. This IC contains anti-aliasing filters, a 14-bit A/D, a 14-bit D/A, and reconstruction filters. The sample rate and the bandwidth of the filters are programmable, but not with very much resolution. Due to the low resolution of the 32044 counters, and difficulty in changing the sample rate, the sample rate was held constant, and much of the software selectively discards samples in order to alter the effective net sample rate.

DSP-93 Software

The TMS assembly code makes use of the excellent monitor ROM in the DSP-93, providing many of the needed interfaces between the DSP-93 and the Windows program. The monitor ROM provides a software download capability, and the ability to start an application. It also provides calls to allow receiving or sending ASCII characters between the DSP-93 and the Windows program, and it provides a call to reset the DSP-93 back to the monitor.

The four DSP software programs that were developed to support the Windows D93WE application consist of four TMS assembly modules:

- * Sampling Oscilloscope
- * Function Generator
- * Spectrum Analyzer
- * Memory Test

Sampling Oscilloscope

The sampling oscilloscope is a simple idea, with a few complications. The Windows code first downloads the program to the DSP-93 and starts it, then waits for the user to click a button. The START button initiates sampling by the DSP-93. D93WE sends a parameter-block (some ASCII hexadecimal characters) to the DSP-93 that define the sampling interval, trigger level, trigger

slope, voltage gain + port selection, and auto-trigger flag. The DSP-93 software sets the A/D to sample at a 62.5 kilosamples/second rate. However, the software discards most of the samples. The more it discards, the slower the net sampling rate. When you choose the sweep rate on the oscilloscope, you are setting the number of samples that the DSP-93 throws away between samples that it keeps. The trigger logic is what causes the scope to start the sweep at the same point on the waveform every sweep. The trigger level is a binary number that equals the equivalent voltage that the sweep will start at. The slope determines whether a positive-going or a negative-going voltage will start the sweep when the trigger level is crossed. The program receives each sample during an interrupt and compares it to a previous sample saved from the last valid sample time. If, for example, the positive slope is set, then if the old sample were below the trigger level and the new sample is above the sample level, then the scope is triggered, and samples will be acquired.

Autotrigger prevents the scope from waiting forever if no signal ever meets the trigger criteria. In this case, it keeps count of how many times a comparison is made against the trigger criteria and fails. After a large number of comparisons fail, it goes ahead and triggers the scope anyway. This is useful if you want to see what is on the scope input, but you are not sure where to set the trigger level. It may be useful to turn off auto-triggering if you want the scope to wait, possibly a long time, until just the right trigger condition is met. This can be handy for capturing seldom-occurring transient events when the scope is in the single-sweep mode. Once the scope is triggered, the program acquires 512 samples from the A/D converter, storing them in memory. Once all 512 have been stored, the program converts them to ASCII-hexadecimal, and sends them to the PC on the serial cable. After it completes the sending, it sends the letter 'DQ' to signify end-of-block. During Beta-testing, some PC's would drop occasional characters at 19.2 kilobaud, and the program would lock up waiting for all 512 samples to be received. Now, the PC checks for the 'DQ' character, and assumes the sweep is complete even if less than 512 samples have been received. This problem is well-known for certain 80X86 processor / serial I/O chip combinations when running at 19.2k baud under Windows.

The port selection and gain values select the programmable-gain multiplexer, and the input port selection multiplexer on the DSP-93. The DSP-93 can select one signal from up to eight inputs, and has 4 gain values usable by these applications.

Function Generator

The function generator program is downloaded from the PC to the DSP-93 and then started. It is based on a numerically controlled oscillator, or NCO. Basically, the D93WE program sends the DSP-93 some parameters (like in the scope program), one controls how fast the NCO accumulates, one determines the amplitude, and one determines the type of waveform. The NCO works by accumulating phase. The D/A converter is set to interrupt the TMS320C25 processor at a 62.5 kilosamples / second rate. During each interrupt, the software adds a phase-increment value to the current phase value of the NCO, the NCO rolls-over upon reaching 65536 (a 16-bit accumulator). So, the larger the increment value, the faster the NCO accumulates phase, and the faster it rolls over thus producing a higher frequency. The value of the NCO register at any time is proportional to the phase of a signal, with 0000h representing 0 radians, and 10000h representing 2-PI radians. Thus the NCO continually increments from 0 to 2-PI rolls over to a small number (the remainder), and keeps increasing.

A large part of this DSP-93 program consists of 4 tables in memory, that are downloaded along with the actual program software. One table converts phase to sinewave-amplitude, one converts phase to trianglewave-amplitude, one converts phase to squarewave-amplitude, and one converts phase to sawtoothwave-amplitude. Each table contains 256 entries, corresponding to a few degrees resolution of a complete cycle. The program in the DSP-93 looks-up the amplitude corresponding to the current phase in the NCO, and then multiplies that amplitude number by the output amplitude level setting. The product of these two generates an amplitude with a great deal of resolution and adjustability. Unfortunately, the 256-word tables provide a fair amount of aliasing, and the resulting waveforms have some severe beat-notes associated with them. Higher resolution tables would improve this, but the download time would be very long. So 8-bit (256-entry) tables are the compromise. The sinewave has fairly low distortion over much of the frequency range, but the triangle, square, and sawtooth waves are distorted at the higher frequencies, and when close to subharmonics of the sampling frequency. The TLC32044 CODEC chip filters, and the limited table resolution prevent the function generator from operating well above about 800 hertz, except for the sine wave which works well to much higher frequencies. The low-frequency usefulness is determined by the AC-coupling capacitors on the DSP-93. In fact, the low-frequency performance of the DSP-93 can be substantially improved if the AC coupling capacitors are replaced by small-value resistors. However, if you do this, be careful not to apply excessive DC voltage to the I/O pins, or you may damage the CODEC IC.

Spectrum Analyzer

The spectrum analyzer operates much like the oscilloscope, and in fact, uses much of the same logic as the scope. The D93WE program forces the trigger level to zero, and the slope to positive. After the program captures a complete buffer of 512 samples in memory, it performs a Discrete Fourier Transform (DFT) on the sample set. The DFT is much simpler (and slower) than the Fast Fourier Transform (FFT) but yields the same results. Normally, the FFT is used when speed of the transform is important. However, the limiting factor in speed is the 19.2 kilobaud serial interface to the PC, not the processor speed. The DFT calculations are overlapped with the sending of the serial characters to the PC, with the result that the computation time is mostly happening while the DSP-93 would be otherwise idle waiting for a character to be completely sent to the PC at 19.2kbaud.

The DFT computes both a real and an imaginary value at each given frequency. Since the A/D converter on the DSP-93 captures only one sample per sample-time, the input is real-valued. This means that the Fourier-transform contains a mirror-image of the DC-to-one-half sampling frequency values in the range of one-half-sample-rate to f-sample. So, we can throw away the upper half of the spectrum, since it's merely an alias of the DC to 1/2 f sample spectrum. This results in the DSP-93 program sending each frequency sample pair (real, imaginary) to the PC, for a total of 256 pairs, or 512 samples. This is the same total number of characters as the scope program sends, so the spectrum analyzer runs at about the same speed as the scope. Some care has to be taken to properly scale the A/D samples, and the range of the sine and cosine tables to prevent numeric overflow in the DSP-93 during the computation. The PC program has to receive the sample pairs, and generate the magnitude of the signal (see below).

Memory Test

A useful program tests the RAM memory of the DSP-93

unit. This proved to be invaluable late in the beta-test program. The program runs seven tests:

- * All-zeros to DATA RAM
- * All-ones to DATA RAM
- * Unique pattern to DATA RAM high-to-low
- * Unique pattern to DATA RAM low-to-high
- * All-zeros to PROGRAM RAM
- * All-ones to PROGRAM RAM
- * Unique pattern to PROGRAM RAM high-to-low

The all-zeros and all-ones programs usually detect a stuck bit in a RAM chip. A stuck data line or two shorted data lines would prevent the DSP-93 from operating at all. The unique pattern, however, is very powerful at finding a number of different faults, and is highly recommended. Since the 320C25 is a 16-bit processor with 64k address spaces (DATA and PROGRAM), the unique pattern is nothing more than the value of an address written as data at that address. All addresses are written, then all read back and tested. If address lines are stuck or open, this test will usually find it. In the final testing of the beta-units, a subtle hardware timing problem was discovered by this test, with the result of the bug being that writing certain addresses changed the data values in unrelated other addresses! One of the GALs (Generic Array Logic, 22V10) on the DSP-93 was reprogrammed before the production units were shipped, and it solved the problem.

Windows Display Software

The windows program coordinates the DSP-93 instruments by sending parameter blocks to the instruments each sweep period, or updating the parameter values for the function generator if the user changes the sliders associated with frequency, amplitude, or changes the wavetype selection.

Oscilloscope

This program, when started, sends a parameter block to the DSP-93 to start a sweep, along with the sweep rate, trigger, level, slope, gain, port number, and autotrigger flag. If the PC is in the recurrent sweep mode, then each time after the DSP-93 triggers and sends the acquired values back to the PC, the PC will send a new parameter block back to the DSP-93, starting a new sweep. If the PC is in the single-sweep mode, then the PC will not send a new block. The user will have to click START to get going again. The display contains some grid lines (in blue) that set the horizontal and vertical divisions on the scope face, and a red horizontal line, that can be moved up and down with the trigger-level selection. This way, the trigger level can be visually adjusted just by looking at the receive signal. In the single sweep-mode the screen is erased when the parameter block is sent to the DSP-93, so you will have some visual feed back if the DSP-93 did or did not trigger. This is very useful when autotrigger is turned off since you may want to setup to trigger on a rare event, and if you see a sweep, you know that it triggered.

Another very useful feature of a digital scope, is that the previously displayed samples do not always have to be erased between sweeps. If the INFINITE PERSISTENCE button is checked, then the samples are not erased between

sweeps. This is most useful if the scope is reliably triggering. It can identify jitter, and other problems with received waveforms. It also allows an extremely simple eye-pattern monitor. If you capture some positive going and some negative going sweeps in the infinite persistence mode, you will effectively have an eye-pattern. This may be more useful, however if triggered off a signal without any jitter, which seems like a future instrument possibility (one to phase-lock a DSP-93 clock to the received signal with a low-bandwidth PLL, trigger off of the PLL, and then display the received signal). Figure 1 shows the Oscilloscope display.

INSERT FIGURE 1 (4.5 inches wide [should fit in two columns] x 4.75 inches tall)

Function Generator

The windows program to display the control panel for the function generator is not very sophisticated, and just allows modification of the parameters, which are sent to the DSP-93 any time the controls on the pop-up panel are adjusted.

Spectrum Analyzer

The spectrum analyzer program is very similar to the oscilloscope program, except that it has to do some processing with the received signal pairs. Recall, the DSP-93 sends (real, imaginary) pairs to the PC. The spectrum analyzer computes the magnitude (square-root of real-squared plus imaginary-squared) and displays that value. There is a linear and a log mode for display. The PC displays a scaled value directly to the screen in the LINEAR mode, while in the LOG mode it computes the LOG of the value, and then scales that value before displaying it on the screen. The persistence modes are different for the spectrum analyzer than for the oscilloscope. The display is always erased between sweeps, regardless of the persistence mode. However, in the MAX-HOLD mode, the PC keeps a running maximum of the magnitude of each frequency bin, and selects either the maximum of some previous sample or the current sample (whichever is greater). When the MAX-HOLD button is initially clicked, the register is zeroed out for all 256 frequency bins. This mode is useful for watching sporadic frequency components that pop up every once in awhile. The INTEGRATE mode instead integrates the new magnitude for each frequency bin with the previous values for that same frequency bin. It does this by a process known as exponential integration, since it settles to a final value much like a single-pole integrator does. 1/16 of the new input magnitude is added to 15/16 of the current integrated value. This is useful for suppressing random noise in the LOG displays, since the noise averages out while the signal continues to accumulate. You can sometimes see signals 'grow' out of the noise in this mode. The integrator is not zeroed when this button is clicked, because it takes too long for the integrator to settle out. Instead, the current sweep value is loaded into the integrator, so it settles from the current value. This results in a much faster integration to the final value.

The reason it was chosen to have the PC compute the magnitude of the frequency bins is that at some later time, the program could be easily modified to display the real and imaginary parts, or to display the magnitude and phase parts of the Fourier transform. The DSP-93 software would not have to change. Figure 2 shows the spectrum analyzer display.

INSERT FIGURE 2 (4.5 inches wide [should fit in two

columns] x 4.75 inches tall)

Other Windows Functions

Since the windows program will be used by people with a wide variety of experience, it was decided to provide several different ways to download software. Extremely useful feedback from the beta testers provided the insight to this. Casual users just want to point and shoot at the program they want to download. So a menu with a drop-down file browser is provided.

Some people like to configure their applications, so a user-configurable menu was provided. This allows you to specify up to ten program titles (more descriptive than the file name) along with ten associated files in the D93WE.INI (initial settings) file. Then you can have your menu say anything you like, and when you click it, some associated program will be downloaded to the DSP-93 and executed. This could be set up, for example, to display up to ten different modems for the DSP-93, and then you could select each modem with one mouse click.

Finally, the third way to select the program is very useful to program developers. In this mode, you select the name of some DSP-93 assembly program you are working on in the SET-PROGRAM-NAME popup of the DEVELOPMENT window. Then, one mouse click invokes a user-specified editor with that file opened for edit. Another click causes that program to be assembled (with user-adjustable parameters set once in another window). A shareware assembler is available, the actual assembler launched is configurable within the D93WE.INI file. A single click to a third menu downloads the newly assembled program to the DSP-93 and executes it. This EDIT-ASSEMBLE-DOWNLOAD cycle is very fast, and removes much of the tedium from writing and testing the code. Another single mouse click will allow you to view the assembled listing file, which is sometimes useful. The notepad editor that comes with Windows is nice for this edit function, but I have found the PFE (programmers file editor) a freeware (not shareware) program available on Internet to be much nicer, and with many useful features.

INSERT FIGURE 3 (4.5 inches wide [should fit in two columns] x 4.75 inches tall)

Terminal and Implementation Notes

The D93WE program contains a built-in terminal for displaying the results of serial input and output with the DSP-93. In OWL/C++ , it is very simple to include the functionality of a full-screen editor in the program. When writing C++ code, you just `inherit` your application object from a full-screen editor object, and then anything the editor can do, your new application can now also do! Unfortunately, the stock Borland OWL TEditWindow object lacks any serial I/O capability, so some slight trickery is needed to give it those functions - the TEdit object had to be replaced with a new object (derived from TEdit) that knows what to do with keystrokes. This turned out to be a significant amount of effort to get working properly on all the various different computers that our beta testers had, but the result was worth the trouble. The terminal window inherits the Cut/Copy/Paste capability of its base class, and so you can cut and paste the terminal window contents to/from the clipboard. It also inherits the Search/Replace capability of its base class so you can search the terminal window for a specific character sequence. This proved useful when looking through the monitor code one night for TMS320C25 RETURN instructions

while debugging some assembly code.

Another class (a C++ object definition) that proved to be useful was a TInstrument class. It was derived from a TDialog object (a Windows dialog-box), and then given a virtual function to handle received serial I/O from the DSP-93. The class was made pure-virtual (meaning you can't instantiate a TInstrument, you must use the TInstrument to derive yet another object, in C++ lingo the TInstrument is a virtual base class). However, all the instruments (scope, function generator, and spectrum analyzer) are objects derived from the TInstrument object, and thus they all inherit knowledge of how to receive control from a timer, and to handle serial reception. The main program just hands control over to the current instrument, whatever that may be, and everything sort of happens correctly by magic. A far cry from monstrous switch statements used when writing C-based Windows programs.

On Line Help

The D93WE program contains extensive on-line help, using the Windows standard help system. Additionally, the three instruments contain context-sensitive help directly from the control panel of the instrument. I have found that writing and debugging the HELP system while simultaneously developing the program resulted in comprehensive help text. Certainly, some important topics would have been forgotten if the help system had been put off until the end. The whole package was developed as a series of prototypes, with additional functionality in each test release. Constructive feedback from the beta-testers helped in establishing many of the features of the current version. Help matched each version, so the beta testers tested not only the program, but the usefulness of the help system at the same time. Unfortunately, not all of the beta testers actually read the help before asking questions, but this probably is an accurate representation of how the final users will operate the program! The on-line help is extensive enough that a printed manual was deemed not necessary by some of the users (those that used the on-line help, I hope).

Acknowledgments

I would like to thank Bob Stricklin, N5BRG for his assistance, and to the DSP-93 beta testers who tried all sorts of PC's and combinations that I would not have thought of, and who provided many useful comments, suggestions, and ideas for improvements.

Note: D93WE is copyright 1994 Tucson Amateur Packet Radio Corporation.

DSP-93 Control Macintosh Development Environment for the
TAPR/AMSAT DSP-93

Ron Parsons, W5RKN

This article describes the DSP-93Control application, a Macintosh interface for the TAPR/AMSAT DSP-93 digital signal processing unit. The purpose of the interface is to provide the following features for Macintosh users:

* Download of already-assembled software to the DSP-93, either in Macintosh or DOS file formats

- * Fast, efficient Edit/Assemble/Download cycle for development of TMS320C25 assembly programs
- * Various utility programs, such as oscilloscope, function generator, and spectrum analyzer
- * Integrated communications terminal that utilizes the Apple Communications Toolbox.

The program runs on a Macintosh computer running MacOS 7.0 or later. It is written in MPW C++ , and uses the MacApp object framework, version 3.0.1. The framework is an object-oriented interface to the MacOS, and provides a clean, robust implementation.

This article should be read in conjunction with the previous article D93WE - a Windows Development Environment for the TAPR/AMSAT DSP-93 by T.C. McDermott, N5EG. Both that program and the application described in this article were written to provide similar functionality to users of the DSP-93 in different computer environments. Thus I will describe only unique elements of this application or elements which were implemented differently.

The Integrated Terminal Emulator

When this application is launched for the first time, the user is asked to configure the serial port used by the terminal emulator. Because the Apple Communications Toolbox is utilized, any serial port on the Macintosh may be used, even additional serial ports provided by add-in serial interface cards. Baud rates up to 57.6 kbs may be specified although the default rate of 19.2 kbs will probably be used for the DSP-93. The baud rate may be changed on the fly by choosing DSP-93 Serial Configuration from the Settings menu. A maximum of about 32000 characters are retained in the scrollable terminal window. Text may be selected and copied to the clipboard, but the characters in the terminal window may not be altered.

A menu item in the Settings menu is provided to let the user choose whether to echo characters typed into the terminal. This option should not be chosen for the DSP-93 as that unit echos the characters.

The Integrated Text Editor

An existing text file may be opened by choosing Open from the File menu. New text files may be created by choosing New from the File menu. The editor is a full-featured text editor following the Macintosh user interface guidelines. Styles, copy, paste, undo, and search and replace are supported. A maximum of about 32000 characters is supported in each file. An arbitrary number of text editing windows may be opened simultaneously. Printing to the chosen output device is supported.

Assembling Programs

An integrated assembler for the TMS320C2x is provided by choosing the Assemble item in the Actions menu.. The assembler does not handle the #include macro (actually it does if you precede the # with a space - it works but gives an error message). The assembler does not handle all expression operators and other niceties that the DOS based TASM 3.0 does. It is sufficient to assemble many simple programs including all the test programs provided with the DSP-93.

The output of the assembler is written to the same folder that contains the assembly source file. The object file name is the same as the assembly source file name with .OBJ appended. The listing file name is the same as the assembly source file name with .LST appended. Both files are Macintosh format files (the line end character is an ASCII 13 (CR)). The user is informed about any errors which may have occurred in the assembly. The listing file may be opened in the integrated text editor.

Running Programs on the DSP-93

The application can down-load programs to the DSP-93 using object code in either DOS format files (the line end character is an ASCII 13 (CR) followed by an ASCII 10 (LF)) or .Macintosh format files (the line end character is an ASCII 13 (CR)). Two menu items are provided for this in the Actions menu.

The program downloaded to the DSP-93 is automatically executed on completion of the loading sequence.

The DSP-93 Instruments

The same three instruments, Sampling Oscilloscope, Spectrum Analyzer, and Function Generator, that are described in the D93WE article are supported by this application. The interface and window appearance are virtually identical. See the D93WE article for a full discussion of the instruments.

The instruments are loaded and executed by choosing an instrument in the Instruments menu. This application assumes that the Macintosh version of the object files supplied with D93WE are to be loaded. If the appropriate object file is not found in the folder that contains the DSP-93Control application, the user is asked to locate the appropriate object file. Figure 4 shows the Macintosh Oscilloscope interface displaying a 1200 bps packet audio signal. Note the two different periods of the waveform corresponding to different binary digits. Figure 5 shows the Macintosh Spectrum Analyzer displaying a 1200 bps packet audio signal. Note how the two peaks corresponding to the low and high tones of the AFSK signal are displayed.

INSERT FIGURE 4 (4.5 inches wide [should fit in two columns] x 4.75 inches tall)

INSERT FIGURE 5 (4.5 inches wide [should fit in two columns] x 4.75 inches tall)

The Future

I would like to provide an assembler with more complete functionality. If you know of C source code for such a beast, please let me know.

Acknowledgments

I would like to thank Tom McDermott, N5EG, for writing the DSP-93 instruments and documenting their interface so clearly. I would also like to thank Bob Stricklin, N5BRG, for his loader code for the DSP-93.

Although this application and D93WE were developed independently, there is an amazing similarity in the source code of the two programs. This is most likely due to both of us using an object-oriented application framework. If anyone has the inclination to develop software for today's GUIs, I strongly urge you to learn and use an object framework. Although the learning curve may appear steep, the results, once you are able to see over the peak, are worth it.

6. Notes and questions

From: "James W. Lynch" <k4gvo@atl1.america.net>
Date: Sat, 24 Dec 1994 12:17:09 -0500 (EST)
To: dsp-93@tapr.org
Cc: k4gvo@america.net (James W. Lynch)
Message-ID: <199412241717.RAA21201@america.net>
Rendered body type: text/plain

Well, the message said the list wasn't formed, but I'll try it anyway.

I received my DSP-93 a couple of days ago and proceeded to count parts and build. I am missing one .22 ohm resistor. I know it wasn't there 'cause for some strange reason there was a poly bag with one .22 ohm resistor and one other one. All by them selves. I suspect it was a last minute addition. Anyway, how do I go about getting the missing resistor? The only other parts missing seemed to be the ones listed as missing on the errata sheet.

Now for a suggestion or two. Find J100 on board one. With the supplied ic sockets, there almost isn't enough room for J100 to be installed. I suggest you might want to install J100 before U114 and U115. I had to pry the ic sockets appart a bit to force J100 in. Not a Good Thing (TM) 8^)

P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. A lot like sticking a pencil into a doorway. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of wire leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together.

Other than those things, so far so good. Great job, guys (or y'all if'n y'all speak rebel). I haven't started on the second board yet. I'm just taking the suggest 5 minute break.

73 and Merry Christmas.

Jim de K4GV0 Fayetteville, GA.

7. Re: [DSP-93:11] Notes and questions

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sat, 24 Dec 1994 12:27:04 -0600
To: dsp-93@tapr.org
Message-ID: <ab2217dc00021004d2e5@[198.3.118.207]>
Rendered body type: text/plain

>Well, the message said the list wasn't formed, but I'll try it anyway.

>

>...

>

>Other than those things, so far so good. Great job, guys (or y'all if'n y'all speak rebel). I haven't started on the second board yet. I'm just taking the suggest 5 minute break.

>

>73 and Merry Christmas.

>

>Jim de K4GV0 Fayetteville, GA.

Just wanted to let you know someone is listening. I hope someone answers your parts question. If not, keep trying. (I'm more of a software type, myself)

Good luck. Y'all are doing fine.

Ron W5RKN

also:
w5rkn@amsat.org

8. Re: [DSP-93:11] Notes and questions

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 24 Dec 1994 16:04:44 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199412242204.QAA10380@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to James W. Lynch:

> I received my DSP-93 a couple of days ago and proceeded to count parts
> and build. I am missing one .22 ohm resistor. I know it wasn't there
> 'cause for some strange reason there was a poly bag with one .22 ohm
> resistor and one other one. All by them selves. I suspect it was
> a last minute addition. Anyway, how do I go about getting the missing
> resistor? The only other parts missing seemed to be the ones listed
> as missing on the errata sheet.

Yes - I messed up and only put one of the two in. The second one will be with the additional parts shipped.

Cheers - Greg

9. Re: [DSP-93:12] Re: Notes and questions

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 24 Dec 1994 16:12:33 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199412242212.QAA10852@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to Ronald G. Parsons:

>
> >Well, the message said the list wasn't formed, but I'll try it anyway.

Opps - I forgot to reformat the pages...will send in new information and welcome pages today...yes - working on Xmas eve on this project :-)

Cheers - Greg

10. Re: Notes and questions

From: "James W. Lynch" <k4gvo@atl1.america.net>
Date: Sat, 24 Dec 1994 18:59:29 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <199412242359.XAA14243@america.net>
Rendered body type: text/plain

So Sayeth Greg:

>
> According to James W. Lynch:
> > I received my DSP-93 a couple of days ago and proceeded to count parts
> > and build. I am missing one .22 ohm resistor. I know it wasn't there
>
> Yes - I messed up and only put one of the two in. The second one will be
> with the additional parts shipped.

>
> Cheers - Greg
Hi, Greg. Thanks for the update. I'll finish it tomorrow, I hope.
Then again, I gotta cook dinner tomorrow, so maybe Monday.

Jim.

11. Re: [DSP-93:12] Re: Notes and questions

From: "James W. Lynch" <k4gvo@atl1.america.net>
Date: Sat, 24 Dec 1994 19:03:12 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <199412250003.AAA14391@america.net>
Rendered body type: text/plain

>
> Just wanted to let you know someone is listening. I hope someone answers
> your parts question. If not, keep trying. (I'm more of a software type,
> myself)
>
> Good luck. Y'all are doing fine.

>
>
> Ron W5RKN

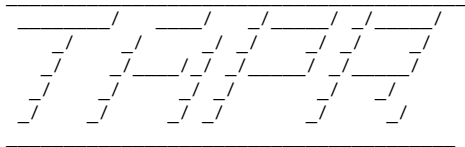
Hi, Ron,
Thanks for the encouragement. I'll turn into a software type when I
get the hardware working, I hope. Hi.

73,
Jim.

Jim Lynch Fayetteville, GA K4GV0
k4gvo@america.com

12. Welcome to DSP-93

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 24 Dec 1994 18:06:05 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199412250006.SAA16556@Alice-Thurman.tenet.edu>
Rendered body type: text/plain



Welcome to the TAPR/AMSAT DSP-93 Kit Support List.

The DSP-93 list is made available to support builders of the TAPR/AMSAT
DSP-93 kit. This list should be used to post suggestions and questions
regarding the DSP-93 kit. TAPR/AMSAT hopes that builders will remain on the
list to help future kit builders with their problems and questions.

DSP-93 Archive

Past messages from the DSP-93 list are availble in the TAPR.ORG archives.
Send mail to 'listserv@tapr.org' with the following in the message body:

index dsp93

To get files from the archive, send e-mail to 'listserv@tapr.org' with the
following in the message body:

get dsp93 filename

where filename is the name of the file you are request.

Tucson Amateur Packet Radio
8987-309 E Tanque Verde Rd #337 * Tucson, Az * 85749-9399 * 817-383-0000

To unsubscribe from this mailing list send a message to 'listserv@tapr.org'
with the following line in the body of the message:

signoff dsp-93

13. List of developers and testers

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 24 Dec 1994 18:25:15 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199412250025.SAA17467@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

DSP-93 Development, Alpha, Beta Members

Here is the list of some of the individuals who particpated in the
development, alpha, and beta testing. Like a score card in case you see
posting from folks on dsp-93. Also -- if someone is local, you might be
able to go see their units or compare units if you have problems.

Jack Davis - WA4EJR

Laguna Hills, CA

Paul J. Beckmann - WA0RSE
Minneapolis, MN

John Conner - WD0FHG
Colorado Springs, CO

Scott Zehr - K9GKC
Ft. Wayne, IN

Ron Parsons - W5RKN
Austin, TX

Jim Tittsler 7J1AJH/AI8A
Tokyo, JAPAN

Michael Zingman - N4IRR
Miami, FL.

Stan Salek - KD6CVL
Foster City, CA

Mark L. Hammond - KC4EBR
Buies Creek, NC

Bob Stricklin - N5BRG
Carrollton, Texas

Bill Beech - NJ7P
Hereford, AZ.

Gould Smith - WA4SXM
Knoxville, TN

Roy Welch - W0SL
Ballwin, MO

Greg Ratcliff
Columbis, OH

Frank Perkins, WB5IPM
Arlington, Tx

Lon Cecil - WB5PKJ
Carrollton, Tx

Brian Straup, NQ9Q
Austin, Tx

Doug Howard - KG5OA
Fort Worth, TX

Tom McDermott, N5EG
Murphy, Texas

Robert Greenfield, ve5dsc
Regina, SK, CAN

Robert Diersing, N5AHD
Corpus Christi, Texas

14. KIT SHORTAGES

From: wtb@partyline.org
Date: Mon, 26 Dec 94 16:55:17
To: dsp-93@tapr.org
Message-ID: <9412261655.A5000wk@partyline.org>
Rendered body type: text/plain

following list of shortages and discrepancies exist in additon to
back ordered parts described in errata,

- 1 9vac wall ttransformer is 1 amp not 1.5 amp,
 - 4 .8 x .250 round spacers,
 - 2 .25 x .250 hex spacers,
 - 22 4-40 screws,
 - 1 mounting hdw for db25s,
 - 1 2pin male header for j103
 - 2 .22 ohm resistor,
- no long pins on any sockets...

15. missing resistor

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 27 Dec 1994 08:38:59 GMT
To: DSP-93@TAPR.ORG
Message-ID: <3010920445.38666425@acd.acd.org>
Rendered body type: text/plain

Parts list ERRATA

1. On page 3 of the Parts Check list R-105 220 (red-red-yellow) should be (red-red-brown).
The install of resistor R-105 on page 8 has it correct
2. On page 3 of the Parts Check list R-211 20K (red-black-brown) should be (red-black-orange).
The install of resistor R-211 on page 14 has it correct

I have two R-211 20K (red-black-orange) resistors and
I am missing the R-105 220 (red-red-brown)

Strange that it is these two that have a miscount in my kit.
I'll swap a 20K for a 220 :-)

I hope when the other missing parts ship a 220 Ohm resistor can
be added

Thanks

16. Board one errata

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 28 Dec 1994 01:24:11 GMT
To: dsp-93@tapr.org
Message-ID: <1183973375.42888771@acd.acd.org>
Rendered body type: text/plain

I have just about finished board one and have a few items to report.

Some DSP-93 kit errata -- Board one

1. On page 3 of 3 Digital:Power Supply
C118 & C119 are drawn twice :
C119 once as a by-pass caps 0.1 and again as a 4.7 uF filter cap.
and C118 in the power supply filter and in the by-pass cap drawing.
2. I can't find C123 on the diagram. I am guessing it's a by-pass for
U116
3. On page 2 of 3 Digital reset and Clock:
C110 : The value is not given just the label CAP

ONE WARNING: If you are putting zig-zags in the leads of the
0.1 caps to make them fit the hole spacing watch out for
C113 and C114 as there are small land-holes between and
the solder might wick over if the cap leads are touching
the board at that spot.

I am about ready to start board two.

Regards,

Bob KCSEJK

17. Progress Report

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 29 Dec 1994 21:53:46 GMT
To: dsp-93@tapr.org
Message-ID: <186187771.51223295@acd.acd.org>
Rendered body type: text/plain

About that missing resistor R-105 220 (red-red-brown)

I owe INSPECTED by # 9 a big apology. I re-checked
the packing material for a THIRD time and there it was.
Unless TAPR has found a way to teleport parts,

I goofed on that one.

----- 1 -----

The power jumper that need to be added to the +5 of Pin 14 and Pin 1 of the resistor strip it would have been better if I had put the jumper in and then soldered the pins. I could have placed a small wire into the pad holes or wrapped around the pins.

----- 2 -----

I would suggest using some heat shrink when attaching the new plug to the power adapter cable. The stranded wire is large so you may want to remove a few strands to fit the center connector tab. You might also want to use tape or heat shrink for strain relief.

----- 3-----

The LED flats are small and hard to see it might be a good double check to mention the SHORT lead (cathode) goes in the square hole. The bend is about where the marking crimp's are on the leads.

----- 4 -----

My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16

The used soldering station I got before starting this kit had worked out well--no more heating the iron with a blow torch for this Aggie.

I am about 1/2 way into board 2

73

Bob Winingham KC5EJK

18. IMPORTANT README (Wall Transformers)

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 29 Dec 1994 22:39:06 -0600 (CST)
To: dsp-93@tapr.org
Cc: wtb@partyline.org
Message-ID: <199412300439.WAA21536@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi everyone.

First: When sending e-mail, please be sure to include your full name and call. I don't know everyone e-mail address (yet) :-) So - wbt...who are you ? So - I can get you your parts.

*** IMPORTANT ***

Okay...here is the deal on the wall transformers. We got a shipment of 1.5amp supplies which seemed to include a more expensive 1 amp supply. (if you can believe that)

Since the units were wrapped in the enclosures before I got to the office (during my finals at UT) I didn't see the shipment. I checked a few units and they were correct....but I checked the remaining ones outside in the garage and they are all the wrong type. :-(

So.....I will start a list of folks who need the new supply.

IF YOU GOT A 1amp supply with your kit, send e-mail to me (gjones@tenet.edu) call the office (817) 383-000 or fax (817) 566-2544. and we will send you a new one.

PLEASE SEND YOUR 1 AMP supplies back to the office so we can return them and get the correct ones shipped to use for the next batch of kits.

I will be including a letter in the additional parts we are shipping to state this, since not everyone is on the list as of yet. This should catch this error.

Just when I thought we were about to get ahead on this project :-)

According to wtb@partyline.org:

>
>

> following list of shortages and discrepancies exist in additon to
> back ordered parts described in errata,
> 1 9vac wall trransformer is 1 amp not 1.5 amp,
> 4 .8 x .250 round spacers,
> 2 .25 x .250 hex spacers,
> 22 4-40 screws,

The enclosure hardware was lose in the box with the board and other items.
They were in their own plastic bag. Will throw in a set.

> 1 mounting hdw for db25s,

Hum...okay will include this in your update shipping.

The DB25 mounting hardware should be in the bag with the power plug.
Will throw another set in.

> 1 2pin male header for j103

See below.

> 2 .22 ohm resistor,

You should have 1 .22 resisotr in the misc bag with the power connectors.
Please check the bottom of the bag..sometimes parts get wedged in.
I'll throw another one in.

> no long pins on any sockets...

Yes.

The following parts are being shipped either Friday or early next week.

1	CA-S4VSC-31B	1x4 Modular PCB Interconnect
1	CA-D20VSC-63B	2x10 Modular PCB Interconnect
2	CA-D50VSC-63B	2x25 Modular PCB Interconnect
1	CA-S4VSC-83B	1x4 Modular PCB Interconnect
1	CA-D20VSC-83B	2x10 Modular PCB Interconnect
2	CA-D50VSC-83B	2x25 Modular PCB Interconnect
1	40Mhz Clock Oscillator	
4	68032-20	32x8 Static RAM 20ns
1	.22 ohm res	

and we will start shipping supplies as soon as I can get more in and we know
who to ship to. Will call the mfg tomorrow and see what we can do about all
this. Again, it is real important to get the 1Amp supplies back, or we will
be out \$400 or so dollars.

Not sure how long it will take - since a lot of folks are leaving early for
the long weekend. We will try to get them next day air if they are in
stock so we can ship them out right away.

Sorry about this problem.

Greg

19. Re: [DSP-93:22] Progress Report

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 29 Dec 1994 22:46:03 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199412300446.WAA22056@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to Bob Winingham:

>
> About that missing resistor R-105 220 (red-red-brown)
>
> I owe INSPECTED by # 9 a big apology. I re-checked
> the packing material for a THIRD time and there it was.
> Unless TAPR has found a way to teleport parts,
> I goofed on that one.

Great! Yeah....resistors and other small parts can get caught in the bottom
of the bags.....glad you have it

> ----- 1 -----
> The power jumper that need to be added to the +5
> of Pin 14 and Pin 1 of the resistor strip it would have

> been better if I had put the jumper in and then soldered
> the pins. I could have placed a small wire into the pad
> holes or wrapped around the pins.

Fair comment. This shouldn't be a problem in the next production, because Bob will correct the problem and we will run it again.

> ----- 2 -----
> I would suggest using some heat shrink when
> attaching the new plug to the power adapter cable.
> The stranded wire is large so you may want to remove a
> few strands to fit the center connector tab.
> You might also want to use tape or heat shrink for strain relief.

Did you get the right supply ???

> ----- 3-----
> The LED flats are small and hard to see it might be a good
> double check to mention the SHORT lead (cathode) goes
> in the square hole. The bend is about where the marking
> crimp's are on the leads.

Great. Added.

> ----- 4 -----
> My kits C207 and C212 the 22pF cap had markings of 22J
> not the (27) as shown on page 15 and 16

I'll double check. Getting all the mfg ref on caps is fun.

> -----
> The used soldering station I got before starting this
> kit had worked out well--no more heating the iron with a
> blow torch for this Aggie.
>
> I am about 1/2 way into board 2
>

Thanks for the update Bob. Looking forward to your comments on board 2.

Greg

20. Re: [DSP-93:20] missing resistor

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 29 Dec 1994 22:50:50 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199412300450.WAA22575@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to Bob Winingham:

>
> Parts list ERRATA
>
> 1. On page 3 of the Parts Check list R-105 220 (red-red-yellow)
> should be (red-red-brown).
> The install of resistor R-105 on page 8 has it correct

Got it.

> 2. On page 3 of the Parts Check list R-211 20K (red-black-brown)
> should be (red-black-orange).
> The install of resistor R-211 on page 14 has it correct

Got it.

> I have two R-211 20K (red-black-orange) resistors and
> I am missing the R-105 220 (red-red-brown)

Yes. Everyone will have an extra 20K res. The kitting parts list I sent to Tucson had 2 instead of 1, so everyone got an additional resistor. Glad you found your R-105 from later message.

> Strange that it is these two that have a miscount in my kit.
> I'll swap a 20K for a 220 :-)

Yeah...when I was doing quality control on the components I had a similar thing happen...counted two kits and couldn't find R-105 but found two 20K res. Thought we had a problem, until I happened to check the bag and both

bags contained the R105 res...and so did all the other 5 units I checked.

> I hope when the other missing parts ship a 220 Ohm resistor can
> be added

Upon your request, we have transported the res into the bag....:-)

Cheers - Greg

>
>

21. Some DSP-93 kit errata part 3

From: bob.winingham@drig.com (Bob Winingham)
Date: Fri, 30 Dec 94 01:49:00 -0600
To: dsp-93@tapr.org
Message-ID: <59.12699.99.0C38B9FA@drig.com>
Rendered body type: text/plain

Some DSP-93 kit errata -- Board TWO Errata -3

..

I have made it to board two !!!!

..

1. On page 17 of 33 JP208 2 pin Male Header
This part is not in the parts list and is not shown on
the parts placement page 6 of 33. This would make 9 of
these items and I only have 8 as the parts list called out.

.

There is a place for it on the PC board by R215

.

There are also two places on the PC board called JP207
The instructions does have a note that said (JP207 near U212)
but it is 5 lines down from where JP207 get solder in and
may be to late. Page 6 of 33 parts layout has only the correct
JP207 marked.

..

2. On page 18 of 33 P203AC Jack. The directions say to solder
in at position P100 should be position P203

.

3. Somehow reading the Crystal instructions misses telling people
with a crystal with short leads that they need to make three wires.
Two for the bottom leads and one for the can lead.
Someone might mount the crystal upright. I hope when the instructions
said flat it was telling me (on its side).

.

.

73

..

Bob Winingham KC5EJK

22. Re: [DSP-93:26] Some DSP-93 kit errata part 3

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 30 Dec 1994 12:18:06 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199412301818.MAA04645@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to Bob Winingham:

>

> Some DSP-93 kit errata -- Board TWO Errata -3

> .

> I have made it to board two !!!!

> .

- > 1. On page 17 of 33 JP208 2 pin Male Header
> This part is not in the parts list and is not shown on
> the parts placement page 6 of 33. This would make 9 of
> these items and I only have 8 as the parts list called out.

I'll have to defer to Bob on this one. He should be back tomorrow from LA.
The State :-)

> There is a place for it on the PC board by R215

> .

> There are also two places on the PC board called JP207
> The instructions does have a note that said (JP207 near U212)
> but it is 5 lines down from where JP207 get solder in and
> may be to late. Page 6 of 33 parts layout has only the correct
> JP207 marked.

JP207 is the RDY plug near U212. The parts placement is correct.

JP212 is the other JP207 screen.

Now that I look at it, the explanation I put in is very vague. Looks like the ole copy and paste hit me here. That should say JP207 near I0202 While the first JP207 at the top should say (JP207 near U212).

Since they are both 2-pin male headers you should be safe.

> 2. On page 18 of 33 P203AC Jack. The directions say to solder
> in at position P100 should be position P203

Corrected. Thanks!

> 3. Somehow reading the Crystal instructions misses telling people
> with a crystal with short leads that they need to make three wires.
> Two for the bottom leads and one for the can lead.
> Someone might mount the crystal upright. I hope when the instructions
> said flat it was telling me (on its side).

Yes you are correct. Guess I better put a diargam here ? Seems to call for a picture. Hopefully the lead problem will not be there in the next batch...but you never know about these things.

The Xtals got changed out at the last minute, so that section of the doc is probably weaker than the rest. I'll get with Bob and get a different wording from the one he supplied to me for the manual.

I guess you found everything else alright so far ?

Great work Bob. You need to volunteer as a beta-tester sometime for us!

Although, so far, this is pretty common for a first production run....just so much the beta-testers can catch. Especially since we were concentrating so much on software at the end.

Greg

23. Wall Transformer Revealed

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 30 Dec 1994 13:27:21 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199412301927.NAA09082@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi everyone,

Here is the story on the Wall Tranformers as of today.

After calling the distributor in Calf and having them panic when I told them that at least half of their order was the wrong supplies, the manager called me.

The story is that Nintendo changed from 1.5 to 1 amp supplies end of this year. The company in question uses the same product number, so the guys on the floor just packaged all the old stuff they had (we think 20 maybe 40 of the 1.5 amp) and filled the rest of the order with the new ones (1 amp).

I know for sure we got at least 20...since the top box in the shippment that arrived was correct. Just our luck that the old ones were on top. What fun.

They are working on it today, but since it is New Years Eve weekend...I will not know the answer until Tuesday on when they will be shipping us replacement 1.5 amp supplies. Hopefully soon.

If you have a 1.5 amp supply you need to let me know (all the usual ways) so that we can ship you the missing parts Tuesday, since you will not need a supply. Since it is school vacation for me - I am at the office now.

If you have a 1 amp supply, you need to let us know you have it so we can ship you a replacement. I have two sources getting 1.5 supplies, so we should have them in soon. Either from the folks in Calf that shipped originally, but in case they can;t find any, I ordered from a second source. No taking chances.

If we can get the 1mp supplies back we can get them exchanged one-for-one

with the correct ones and have them available in the next order.

I am suppose to know Tuesday when the distributor in Calif will have us replacements. If he can have replacements to us by the end of the week, then we will wait to ship the supplies and part together...if it is later than that...we will ship the missing parts and ship the supply later.

This makes the packing and shipping at the office really bad, but we want to do whats best for everyone involved.

Looking forward to all that mail on this.

Cheers - Greg

24. WALL TRANSFORMERS!!!

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 30 Dec 1994 14:39:48 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199412302039.OAA14634@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Bob Winingham KC5EJK, called to remind me to tell everyone

PLEASE DO NOT CUT OFF THE POWER PLUG on the original unit.

If you have already cut off the plug and installed the new one...you need to let us know so we can also ship your another plug and also we can't return them like that.

Cheers - Greg

P.S. We are really looking hard for a source of 2.1mm PCB power sockets for wall transfmroers we continue to get...let me know if you think you have a source.

25. DSP-93 Build Notes 12/30/94

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 30 Dec 1994 15:16:32 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199412302116.PAA17471@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

DSP-93 Build Suggestions
December Production

Updated: 12/30/94

We will try to update this message as the build happens and post it so ever so often.

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail list area. To then request a specific month, send mail again to 'listserv@tapr.org', Subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94).

* Be sure to check the bottom of the bags for parts that might be stuck. The enclosure hardware was in it's own little plastic bag.

* Parts that were not shipped on Dec 18th shipping (US Kits Only)
These parts have all arrived and will begin to be shipped after Jan 1st.
*** International orders were shipped with all parts ***

Qty	Item
1	CA-S4VSC-31B 1x4 Modular PCB Interconnect
1	CA-D20VSC-63B 2x10 Modular PCB Interconnect
2	CA-D50VSC-63B 2x25 Modular PCB Interconnect
1	CA-S4VSC-83B 1x4 Modular PCB Interconnect
1	CA-D20VSC-83B 2x10 Modular PCB Interconnect
2	CA-D50VSC-83B 2x25 Modular PCB Interconnect
1	40Mhz Clock Oscillator
4	68032-20 32x8 Static RAM 20ns
1	.22 ohm res

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it. (Also, be sure to include your name and call so we can figure out who you are :-)

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Inter-board connectors

When installing, make sure that the 83B parts (the longer ones) are used on board 2. Refer to the supplied sheet on the errata, which shows the connectors in 1:1 size for comparison. The shorter ones on Board 1 (bottom) will be cut off, while the longer ones are used to connect it to board 2. The difference in lengths between 63B and 83B is about a 1/4 inch. These are almost impossible to remove when installed, so DOUBLE CHECK!
(** For International builders the component ref sheet is in the build doc **)

* Page 3/2nd col (Jim de K4GV0)

R105 should be (red-red-brown-gold). It is correct on install page.
R211 should be (red-black-orange-gold). It is correct on install page.

* Page 7, Socket Install

It has been suggested:

That header J100 be installed before the U114 and U115 sockets are installed, due to the tight fit. (Jim de K4GV0)

* Page 9 (C113 and C114)

It has been suggested:

If you are putting zig-zags in the leads of the 0.1 caps to make them fit the hole spacing watch out for C113 and C114 as there are small land-holes between and the solder might wick over if the cap leads are touching the board at that spot. (Bob KC5EJK)

* Page 10/col 2

It has been suggested:

P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together. (Jim de K4GV0)

* Page 15/col 1

It has been suggested:

The power jumper that need to be added to the +5 of Pin 14 and Pin 1 of the resistor strip it would have been better if I had put the jumper in and then soldered the pins. I could have placed a small wire into the pad holes or wrapped around the pins. (Bob KC5EJK)

* Page 15/16

My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16. (Bob KC5EJK)

* Page 17 (JP208 2 pin Male Header)

We have asked Bob, the designer, to comment on this part. Currently do not know where on the board this is....it might have gotten removed in the final production, but not removed from the parts install. (Bob KC5EJK)

* Page 17 JP207 and JP212

These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212

* Page 18 P203AC Jack

The directions say to solder in at position P100, it should be position P203. Typo.

* Page 18/col 2 Crystal

It has been suggested:

Somehow reading the Crystal instructions misses telling people with a crystal with short leads that they need to make three wires. Two for the bottom leads and one for the can lead. Someone might mount the crystal upright. I hope when the instructions said flat it was telling me (on its side). (Bob KC5EJK)

TAPR NOTE: Mounting it on its side is the best solution, in case you want to mount a later board on top of the 2nd board (i.e. TNC-95, ethernet, etc). Some of the Xtals shipped had long leads and some didn't.

* Page 19

The LED flats are small and hard to see it might be a good double check to mention the SHORT lead (cathode) goes in the square hole. The bend is about where the marking crimp's are on the leads. (Bob Winingham KC5EJK)

* Power Plug Install on line from transformer

I would suggest using some heat shrink when attaching the new plug to the power adapter cable. The stranded wire is large so you may want to remove a few strands to fit the center connector tab. You might also want to use tape or heat shrink for strain relief. (Bob KC5EJK)

* You have a Mac and need to read the IBM disks.

I have a Macintosh and I had no problem using Apple File Exchange to read the two computer disks into my computer. Mac PC Exchange did not work on these low density disks so use Apple File Exchange. (Bob KC5EJK)

26. Re: DSP-93 KIT (fwd)

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 30 Dec 1994 17:03:38 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199412302303.RAA28816@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to gjones:

>From gjones Fri Dec 30 17:02:05 1994
Subject: Re: DSP-93 KIT
To: wtb@partyline.org
Date: Fri, 30 Dec 1994 17:02:05 -0600 (CST)
In-Reply-To: <9412301608.A7056wk@partyline.org> from "wtb@partyline.org" at Dec 30, 94 04:08:23 pm
X-Mailer: ELM [version 2.4 PL23]
Content-Type: text
Content-Length: 1701

Okay -- lets see what we can do.

According to wtb@partyline.org:

>
>
> My compliments to the cook(s). this is a real kit and very impressive
> in all areas. its amazing to me that a complex kit like this is as
> smooth as it is. now for the questions: is there a good efficient
> way to clean the flux off theses boards after population? can you add
> a two pin header to my shortage list? where is r224 mounted? i have
> the part and its on the parts list but i cant find a place on the board.

> I have bothe boards complete as far as i can go and am impressed!!!!

> i will send the 1 amp transformer to tapr but the plug has already been
> changed. should i send the transformer and both plugs or reinstall the
> old plug(with a splice? wtb@partyline.org is bill boman; n0lik; st

```
> louis,mo.  this is exciting!  
> reply wtbt@partyline.org  
>
```

1. Send the unit back with the plug you installed. Don't try to reinstall the old plug. I'll throw in a new plug in your unit.

2. I typically don't clean mine off - shouldn't be a problem. The only correct way to do it is with a pretty expensive machine that uses dangerous chemicals :-). Maybe someone on the list has a better solution.

3. Will add the 2 pin header...although you probably will never use all the 2-pin header on board 1.

4. It looks like R224 was dropped in the production board, but was not removed from the kit check...that probably means you have an extra one. It does not appear on page 14 of the install.

Bob -- can you check this to make sure about R224.

Hope this helps.

Greg

P.S> Thanks for all the great words on how the kit looks...makes me feel better while I fight the problems here at the office.

27. Re: [DSP-93:31] Re: DSP-93 KIT (fwd)

From: rparsons@bga.com (Ronald G. Parsons)
Date: Fri, 30 Dec 1994 18:33:34 -0600
To: dsp-93@tapr.org
Message-ID: <ab2a565b01021004a1ac@[198.3.118.154]>
Rendered body type: text/plain

>According to wtbt@partyline.org:

>>

>> now for the questions: is there a good efficient
>> way to clean the flux off these boards after population?

>2. I typically don't clean mine off - shouldn't be a problem. The only
>correct way to do it is with a pretty expensive machine that uses dangerous
>chemicals :-). Maybe someone on the list has a better solution.

You can get de-fluxer at electronic supply houses (even Radio Shack). Don't know if it makes any difference but it looks MUCH better and makes it easier to see possible solder problems. I always do it.

Ron W5RKN

also:
w5rkn@amsat.org

28. I'm back!!!

From: hammond@camel.campbell.edu (Mark L. Hammond)
Date: Fri, 30 Dec 1994 20:44:33 -40962758 (EST)
To: dsp-93@tapr.org
Message-ID: <9412310144.AA29926@camel.campbell.edu>
Rendered body type: text/plain

Hello Gang,

Just got back from my holiday excursion! Things here are fine...

250 messages to read thru....looks like assembly is under way!

Cool! More from me later....

--

Mark L. Hammond, KC4EBR
hammond@camel.campbell.edu

Campbell University
Department of Biology
Buies Creek, NC 27506
1-919-893-1734 or
1-800-334-4111, ext. 1734

29. Board Two testing

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 31 Dec 1994 05:25:06 GMT
To: dsp-93@tapr.org
Message-ID: <2470703070.58479852@acd.acd.org>
Rendered body type: text/plain

Here are a few items.

When doing the voltage Initial check out don't forget
(like I did) that at this time some of us are missing
R210 the 0.22 resistor and the POWER Green LED will not light
and there will be a very low voltage on one of the + 5 volt
test points.

I just tested at the R210 pad for +5.
To test the power LED: I made a temporary solder jumper at R210 .
I used a 2 foot length of solder to get 0.2 ohms :-)

Item for Manual revision:

When testing for the Analog +5V. use C227 for the test point
as it is hard to probe under the flush mounted C233 electrolytic
capacitor.

Item for drawing revision:

AI0:Power Supply [5 of 5]
There is a dead short in the input AC power drawing.
The ground line drawn just under the fuse
should have a hippity hop over the vertical line that goes to the
diodes and not a connection dot.

73
Bob Winingham KC5EJK

30. Re: [DSP-93:23] IMPORTANT README (Wall Transformers)

From: "James W. Lynch" <k4gvo@atl1.america.net>
Date: Sat, 31 Dec 1994 07:06:57 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <199412311206.MAA00888@america.net>
Rendered body type: text/plain

Greg,
I received a 1 amp supply, but have hacked the new plug
onto it. Still want it back? Should I cut the plug off
and save it or will the new wall-wart have the right one?

Thanks,
Jim.

Jim Lynch Fayetteville, GA K4GV0

31. Program to fix text files

From: "James W. Lynch" <k4gvo@atl1.america.net>
Date: Sat, 31 Dec 1994 07:18:04 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <199412311218.MAA01279@america.net>
Rendered body type: text/plain

I found that the text files on the disks were unreadable with any utility
I had. I dumped them and noticed that the end of line was 2 carriage
returns, rather than a cr-lf that DOS likes. I wrote a really simple
program to convert these files to cr-lf. If you have a similar problem
here it is. It's written in standard c so if you want a copy of the
source, let me know.

Execute by:
crx2lf a:manifest.a1 c:manifest.a1
or
crx2lf readme.now >c:readme.now
or
crx2lf readme.now | more

As you have guessed it is called crx2lf and takes one or two arguments.
The first is the file to be converted and the second is the converted
file. If you specify only one argument, it will write to stdout. (console).

This is a uuencoded, zip file. Anyone that doesn't know how to use it

please drop me a note.

```
----- remove this line and all above -----
begin 777 crx2lf.zip
M4$!#!0 ( .95G1U'28%QBQ4 $0A * 0U)8,DQ&+D-/3>4Y?WA3
MU=BG]] [ <I$E_0B@4~*~;0#M9I,/6%;2E5.C2AZD08*9&%*P*K!-;EMZ:\FEI
MTR>N-#FTX/;9'NVR8-NLT.>ZJH4MZ_45AM_?S*&P) [ADAUWGAY! (610D/.
M]YY[DS9T^ [ [G^_] +:7K><] [SG0?W^Y [#KO>*@KDGf=Y%QVRXB$ '8>BOJ .G.@
MSKJ+VW(-6A^U!HL"UC#_A)40>;KNK8I:*P[C4T=(V';TB6+I;Q"?!_CO[Y4
MRO: _6,";/ZX1^+HX.M#H[4K'I?HI9/^8_ [HZ6!FK?6(#GTXA@R!D; '@M9-
MUEUG'%_@BG2AC2"FT7 4,4$*A']F]] ["5I@$K_T5[L.+U64707D!6$ "B(0"S
M2,H\BK+++C89\ V%CC2 =_I@] $[0^!;RV60=0L3I.=0WT?K?FF&WCAY]? [S!J
M/Q\0&2CJXD\R1ZOL1WYF=WQPN3N3Y);:98Z1+5" ]Z-CL8&Z#-9CY0R0)0=-.
M2C=:2>E#++0>*0\LN>27=$5=UI.,0! [KB5V?*WGI"3.68 [DHGVO)%OC>Q$
MUC[T[6.VH/5NT-B]UCY.!58#L,;:IU>!=0#<9^WC5: & _L*=CU7M>9-TJ!
M5/X0!=_ .0=L*8R P]7:4 _#=#J0AV$- '0Y16R#T_E!0Y1^8=,PV=,0*G"RT
M:FQ&2!\^+7'^7('0?0A"X8'+7A)TQA (M'+,CJV)KODM>/<U3,N"2CR-/7V>^
M"V@21,C#^@]GJ S3M$D_5%!'4'+Z=B<6.?D +.*Q0$<B9R92-E]SP 9XS1/
MGPZ.ZD">L',,(64Q<7EM6D>?"GLO HGQHG$*/*.#ONMX>&D&$ADE+= 2RY#8
M?A.J<<OC.4#3>3WHC"GA&0F0V;-Q _[LH2@VHU]G/EJLR400]_]M>@8.EO
M\T-/=/^<_MU?)B)X-Q.<U?1'F?YM/"!X^+BUCC %;7AHD$%TKV+"UDQA9)3\
MM,J^/U,@F9F">4!22"XGD%P>?HT"\7&R(^YY: BIGZ+= !A;M,MZG8UU@</W
M^U'QIX4*'W>]0?/D3W!IK34PS(#7^BOJK*PWIXM_U(KCK[06#X!S^_Q?M08N
M,*$=HA]LR!<.,PQYGT8?[YKH.04KN=- VM67GZA>*"[ZV[0]YY&@_AXROD
M/-1D!%;*TU#3M?)I- )9GB%QYFB07#RB?F@=$P_)NTX"D6]%^KGC@VNB.#RMO
MM8M9G+W\0<G@+ [=+S,&5YJM#D<RXAWT/K'V=#5K76U>P?>57\ 6'XOT[_BQ8
M])!U-#/H0X&WF=*I#H$SU\5+)0-!)RHBA6,LA@A<(U?KP)9PV'RKU= %X5UR
M-7;YA7P\QI/2359Y@2[P#H-/&0YLM(+BV,C^&R4#1P@)+@L, ,5\?HM%\ )6B@
MF@Y49 J"I ?E1G8R6EJ#^ZLLA,^4R@94)!FRQK<PN'O\ ?:[65AR1CFV^W@
M*=E8@WM]F 3MQ^J_B-&U*PG?P"/?XV&X5!99 +-C/[GZ:;^6#ITW;%B.-L
M"Q^4&#RLYY""DCN!A9(3!82TG4=HK4N^@L" [+E$7Y("764 A6,4 #B4(9 !6
M= __KS8=OVCP6- IAIYNT[8E54Q@V:W@/X+#>C K&"$1*18<=288:>3_Q*,MQ
M:;L=#X/;&;\,<_B@P>$09H#<-(B"#>#S*?,R5A;V9;GDD[B$]XME8Y,M@D_1!
MCGP""DDAJ9K_W/8%TI4--AH.2%8XU!SF' [<:D1H$S$SANGN4E:^ $PN^T08ET
M,#"?D$QE_]7([X3Y?]Y#(^7))PDA7V@A%<)_BPQ$[C @Z ^8PD).Z^CI.83
M?-89.G0X2;E7,AWST3EPA&_Y6TB3E'6480'13R<9I,R&R5HZF98RJ2\9B/P(
MA3B@X(IUAYCC+W=(#AB*(@_?CTCY=%K2JR@X7! C&1S"8Y2$#DBPB*)*?-L'
MJ%(I4#>88>Q06Q6K1(IE_W9; 1HPC^'P2\@0ZM79, \+/\J"C!9<!GD';^""
M!@S)!ZEY9Y#7TB4'R<<(^NATQER=SKA+)%GP'+#=#'\SAW;,@Q1'?#BX^52
M"12^HXH5#>S(&[B2+B*00@L4AVJXIYSR8UZ#^S2M]W#(*8/, :XH+#.B&BX,
M9%_XYX:WZ -0&0'+[):+> ^UII(6KDH'Y0Z#@VE<N?NS!851$#V^V82' \ /9
M2UTV[Y<J5, ,>7N%=-4=Y0\ (OD1)3:)+F4JZV2AW-K(I+/[C+@JLVQ8I$Z;
MXY9_K_<DL<;C$UA0^"%S66Y-TJ/(TT).#B1V_,4^]@$-E[%]9:~VQVS>1F%
M=VEW7 ?/8>2H2D'/CG<=)WHKC)GH')-4,P0.'PVC <F8M!5 .D@XG6C_DS:;
MTXB=QI?\.LF@UACYFGHF)]>9:)F*+25$FAYU&OU(E8(%)%I(+)$"#$/[7+#E
MM6N1DZ!K12(:0H3?>-A,B]Z:A#P[ ]'@X\CIRRX_H/8J@Y*H*B,G%J<L_1<JV
M/:JSUJ"CN]2L0%>;/9KY6+5D0@1,V,#W!#C<+T(NC!<0E"$@%7<+=%@I\H
M)EAD1,XM^U!B8TB:J7*50U'HKTH_#1"A[OT;H++@*2B;>@K^J.T\&3./XK,T
MM[IILU-:3E;)'AU?QT3<9)EZFB;')*8'H3=W"N7[*MXTYN]2\B$,X%I)U)
MQC*0/X4*F.G'8TD#0AD#BVS@&(\#^+!*%K-5( )R 3&?SK>:%#/^N-J_S"2Q
M!!"&5X%?>FR)N- -2RMW&[YAVFJZ]/\<D^@Q:23L@/EJ 6<.%FR:X&35W,;
MVQYC-L;#'#AZE3%892(^ ^ =1QVNA\PL>PB)PG4@F:F:5#D,+2I)53C0&I!YC
M?(\,0BK&,JA',XM)H>"B-H#L.7D$/S\N. 3[6K!' -MF'3^'W[G_ ,31G1.&U
M!2W<AMPU1RV(!MQT7,44('8I8B6]6W[>Z(&PP^'5(//>-VY(]BA:2+/R.X2(
MO"9)X00?4IL' ?- BQE$ _9@ ]_.4N<"(E$D)M\;!/2"MO+2#B!%9*/)+B9!
MG("$//>D&HC.IC=GDBH3?M 4JB:]*/)G1+AF S"2K1/-24*1?DK3CP+-/!*G
MN^75! /3$TX47D?*D>=1H*+9AJ0E?E"V;!TF\;R$ )M2GI@E]SXG +5801*
M50XDY3X>ISK0=$U(NIU$MU2"S4X''>0R&#RI>2GBHY%3</LG:&1)D'1_N=
MJJ>0$X1*% *X<D<K4I4_MZJD).GCKC*A-U&\.KT0 N/H(L85(S4E</_2-2K
M/E0%:,=L?0AYN9'S(\=3&A$3:%!-?1+L-C*M?!!LAK3Y5,]V@E!902E?:0)4"
MC4J+#42W:*K*T%3A_EFF 4[BEE)=P,KW0"M@!0<B$IHUR7Y0%A+D-!X&DF
MU^M!8.H;] $AQF9GXRL(\) [R0I0HPJT8^' (4LPM/N#Q0%U5]U^#D0LK"" [FSF
M8:=.HJ7$2 L,FFR6?-Q1Z(*U9([#RF;5X@+PMR/#+7^A5B ZORJ%N<S/6KI
M,&LV*070#*JE2V67^B,M9H'F=' =FG/%='D>!S')>;3*$YIN=0V71^(6YK3
M^GA(N<N0*#DTPX0APQ!RD_]2Y-X*?)9:+HE BY=+SKBBXD#H9:'^AP4E"YAE
MD0AA-Y00L%LM2M@!N<&IG9$ \LF06<UK$/W=4&+2:VL.(V52QGD50_0&!F-
MPD'4C:';^ G2<@Q-M9V(QJ<S!I$_%=D/H0SY8/,>0"J&?;S50./X;.Q@^6QQ
M(33K^N[55Y2YYR_QZY*N3\E54'+K#3%PW^ZR<;CT/*L(Z_H8Y(J>GC/@6D-1
MWH5NP:B>TK;:LK0>AQU*9F\=YGJW, :4(GKEZX3KMET(H0G!&JDL5U$JP],F
M!1NEG$0^TI;?@->.0D$=J;V9P/9@^W;2^7H+49X@7=L)F4S( ; 755[4Z3<
M)'#7(8S!.,.SMG9WD+P2<?Q-FC8FBM4*.X8JZ$#5>*G5 6V^TA96)P3Z/<1
MX(NZ;08<XX!C6%ARA)75]+A _W:"1#82)$DZ.&P>\!5-4EN80FUF"K4TH):@
MI(=ABKHfQ3>*V533-!0IJ5J$/^NM3-5EEFM2[=GW47^*_MD3D@T%19FHM^'
M><C&WZN09)/+181U2VZU7]8G4_3$^9IZ>Y>'G*::;6=PR4N^VC?1.]0=-3SD
M'O"D#<; ^/RF^_WCC'<=J;C59GF=W?D^"$/B.9A_<+JZ.GHJ<!IU.D[.YKU
MC.-$]/(ST<L=N=HFO(5A6 (*?H?G:0.1D^$?XJM"G&WFAHY[1DZ%99Q<]_F+
M/;@; .EI3LB*GJZU6B]$D\;2EIRJ$6\Y:E^HJQAZ=JZ?6)3\X>0?@U1X(/,G4
M@]2URG^U!>7=)$V4!8J6ET2#&(?^!>[WN^S#'.KSVR Y[H"FJ<^$7) 'X50B
MP8'<12 :^IZF' _2KF18K7W<1 L1J C9:>6'BP)M[71\RX_9')^Z ]4R01
```


M77&/AS8'?]&VJA%T%_0]H'] .2RN07YQ(_#&XHX'V/RJF%)F0#W5*!'I/=1@=
M<55;&:6&%ID75HY\$+K_8J'L!2DHRQ?6NH%6'6I929I^AA!]2";\1LBGL&[MM
M1_1H3^^(=YL@WX!GF/VRTTXX_J66CU*3\$5^5MG9/LD!Y[[HZZ(<BK%M>\F[)
M"8!06^0J8Q(Y"9H7A[P> .?VH>6P-J/ , '?>F-^G+G#&0JGR3)N7Q+Q64[5K
MDM5-: [TV0QEH7@C9TH@DJ+TF?#(PJ"\; E '*UOFL"3G0N0.]VW,RSY=4+RFMN
M:F.:QR\$Z(3)SU+HOF2;Z%2ZE&/4=R75!Z72I5R=@[!XF>9N\$%Z0LVMHY*2T>
MI5PJ:4=#Y^&"1[@=I9 _M=:FHYJH;(MSH\$,PJ=?!#"G+#8[F238R\$:2V"I%/
M\$5D'W#U([2_@#9YL@H9I\$P277UH2"VG)AJO.1_\$)"K\!'<)?_#W>,1CD(CM(
MY-E\$"W" 'U@(:4;]+_+OJO^R(FI2_Z513<.;*;4^:E?+6AD6:IK?T?;0DE?G=<
MZXTV^4XGEY@Q3LS_LW8-J<U0(C"HAMWRF^#\~S?N8/@60EI3VCQZ6UQ-4ZPX
MPPTIASB-(0.<A! ,A<SXB(:WG6JSJYC9<!=9M_ "95\$70-03?4K@%,NVXU7'N,
M&IOXNEHPXXZ6N+)X\H!;P6XSDF=,& ^XSDR<3!;+UV]HY[ZOM0[:K984EMNI
M<[BY(US6')JZVQ4+#)^2/ND/#]K?A>U _=#]+QQ)VQ[<)>1)\RNZ%!\<;[L4I;4
M0_339[CHR,J-0QWZZ0BJEUOLZ]:LY3N=AQQC_.6B[!WB:+K6KH[6PX9'0"L
M'^^C, KV;R68_OIX>"43<\H+Q&R-1NM%^0A10HA(7/#U[>0@+'Q.D40>#7;Y
M2+#K[Z2C2R+AJ]FV\$P+<70A7=P>)/\7%R\J(_0&'&ZM#0_J+#0\MG8E\; .3?
M.'QJ9+2(&_&SK%=F[90U]:P79\W,L^4]F0=\$WHZ\4[->S>0,>R;OV;S%LR.S
M0[.9] \[]TGUYZU9?YH5^83UWT!-8P\$X4Z?^G(XOT#&C[*;<C<_Y^"9Y-N(Z]
M\$HDTD"0?T ^?DT\1**(\#H^X2B547;80N2;'3:^)HNLH9\$.ECZJR8/.#G&
M?X-I3_N~*^QD<6P@9,^"8)4\;<C"RC4^.%K7"2?/_C61<\!9M.<UYB=@_L7
MX! ,CY_#QD7,CY]A! '<Q\$QN-T[XL[82^L]J:N>DGD;W%Z>C8P]6&\#480E<#N
M18"'XNJ(30H1P+^/'S8JIL-PV3R<_?L(<V:X72)HN+V!H(Z)]41EN^2\$DG/8
M1.=T\$W/[J]N#/'IZ^FDWOK#, ;.\$Z^Y\ "9J02>/OZ5J#?2Y" T4#5YUS8R.B=P
MC8BY&#840,APKRY2F%>T*#\^HWSUR*1&Y1=;JVK)A1^SA6"DUSKY)*Q7 />
M^A*=,&4C%EW\$IIIX.IW;V/TD@H9/%*U8\$X=H,).\$_*K(28*Y!GGFCY\YN^)^MU
M8UB0B4)%'N_L>I) \?F TBP;:67P"%S;@-R\$3-0\N08J1/&G03T\04=.I:QK
MYT!B7TKQK_8544QOT3&W:\<E016P]%^FWPF5M;EA92,X3NR+Y4\3\$5#0P1[A
M4<V:SE^1=;MA;PT#XBZJ%+HDX8)4ES8&8<+R<R7D_Y(P5-2#'"W@]I_W_
M8NB@XSHGI_%>0)M3L=[P4=.M)CE]3' '2_L7W.LC(:CQ)FET+TH9@9_.0C
MN@!,H]6%'7KY]AB.JI;YY3;2IU>Y6*I'4F[HU_7\$'VN_YP/;\$K;R86@%H?3E
M[' 'MHMZ?^Q^R4(-57GW90@LT-%0(B%0\$UX?;K"]PCR)^-WEYUN04KG(.NE
M]RR2/Q@/M=<3^9UQ#\$P_J])P0.<X4QCBRA?"D[P_3_(.R5!X4/[M^,J]=[XW
M:H=OQ@_?PV&.8[3A0<3B8*5]XR?_ \K\UY8T_#Z<\A1@1_Z-@XXGS6-*FD?A
M->/_R]0WG2^SSN['H#ZR8QQ#BJ&2]Q3(Y> .0B*0Q?^0+KAVL7#H.G5QW,E\:
M4;^*!RK@_5R<2]_<2NO/: '#8S@_D0/J0SJGF(+P<!P4N:"8?%1/E_C*%N9T
M>0J8#E?98_4IF=@CM7>>^+!5L8MWRLG_A?&0;_#7L8_ ;9>F\$7C\EL]\$X,7K
MP-/V_QUIV0Q;X2F\B8ER4,WL4)5E3QG@2*8)#.@H&!BZY0,1CY).X.5<WA?Q
MT!T#:#DEBZ0G3V]FHGH@9J%TQ\$S*I,80CBIPSV.(!\ "H_3#2X/G5+7\3WLVG
M_&<1W+EF0HL9@_ZP#,Z1]'(YH7MW\$\'^&Y'_TW/3YGN1]I&'A"F&AL*)AV[]
MZ[9\7Q1N>72!<-L=2Y8(RQN\6VOK'Q-6UHM;BU!5G:_NL4W")J^WP9MANNN1
M^@;0\$[5;A6W>ABW>VB<\$<9/WB;KZ6K&NH3[#A/Z/GY_9Z0_Z_<1[FNLW;+I
M3N%1[_;BK9N%NOK-=5LW";<T2"(=+#_A+VI"FJZ%AFV;ZNOJMPBU_EU3=3N=
M83@];S0:+3/TTTFN/H<AJ1^]GDSY9)%Y# 'S!9SHA#*//8K2A]IFG?4TGZ!V6
M_L_)V?28-&:2XVP(1.CFY0_8(:91%0\$\' J&G8_K_5X.SRW)CTN@WV0"?G@*
M0&T*[])\"[YD]/S\%[ID"#TR!CT^!STV!+TV!D>UF.'L*+\$R!TV!^VTZ@8\$?
M[GGF>?* _?E_E4;=][UX7*IH_?S[HPEM7+PJ-C];6;Q;N%#90;8"P_@?8UD"G
M-J.X\$QN%091V%I7__BFQR#>,M_M]=+6K000HMM*2V[_=NGB)7?<M7Q%U7><
MR&+16698X,_,@'\M9T03]CV7RDS4SRPA_#);<B:F,R=5L4U96EM%DL?"6:>9,
MBR7'DCZCYGJ8'N8P<[0E#07G0P%02P\$"%_4_"_#F59T=1TF!<8L5_!\$
M(0_"@_"_0U)8,DQ&+D-/35!+!08_0_!_#@
("S%0

end

32. Re: [DSP-93:35] Re: IMPORTANT README (Wall Transformers)

From: "James W. Lynch" <k4gvo@atll.america.net>
Date: Sat, 31 Dec 1994 07:32:40 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <199412311232.MAA01439@america.net>
Rendered body type: text/plain

>
> Greg,
> I received a 1 amp supply, but have hacked the new plug
> onto it. Still want it back? Should I cut the plug off
> and save it or will the new wall-wart have the right one?
>
> Thanks,
> Jim.
> -----
> Jim Lynch Fayetteville, GA K4GVO
>
Oops, I should have looked at all of my mail first. My excuse?
I thought I had. 8^) Never mind. "Sorry 'bout that." *

* Maxwell Smart

73,

33. Re: [DSP-93:36] Program to fix text files

From: "James W. Lynch" <k4gvo@atl1.america.net>
 Date: Sat, 31 Dec 1994 08:05:10 -0500 (EST)
 To: dsp-93@tapr.org
 Message-ID: <199412311305.NAA01762@america.net>
 Rendered body type: text/plain

My most humblest apologies. I sent the wrong version of the program and it doesn't do as advertised. It just removes all of the carriage control, so please toss that one out and try this one.

Again, I'm really sorry.
 Check your zip file against this output:

```
pkzip -v crx2lf.zip
```

PKZIP (R) FAST! Create/Update Utility Version 2.04g 02-01-93

Copr. 1989-1993 PKWARE Inc. All Rights Reserved. Shareware Version
 PKZIP Reg. U.S. Pat. and Tm. Off. Patent No. 5,051,745

□ 80486 CPU detected.
 □ EMS version 4.00 detected.
 □ XMS version 3.00 detected.

Searching ZIP: CRX2LF.ZIP

Length	Method	Size	Ratio	Date	Time	CRC-32	Attr	Name
8518	DeflatN	5517	36%	12-31-94	07:36	cccf1839	--w-	CRX2LF.COM
8518		5517	36%					1

----- toss this and above away -----

```
begin 600 crx2lf.zip
M4$!#!0 ( (, \GQTY&, _C14 $8A * 0U)8, DQ&+D-/3>4Y;703
MUY5/, Z.1+/D3A,% 94E@-U3!3>S4D-@8!USYT"0@H)&CD$!- M0-L:D\([*)
ML>5J;SQZHD/;$QI.0\*2M!N7<)S4"2;=-8J=6/E8&DRZ7/64)) THPPG$&"1
MP4)O[YN1;.%F]^S_E;'\[GOWW7>_[WV/KO=*I/SC3/]M1^RXA$'8>BOJ.;VO
MP=K%:[%*UD>L4DG0&N$?MQ(B3)>]5550Q1%\A!I*VY?LGB16%", [V<"UY>(
MN8&_?T0 +9#PBAP=7#IPKGY\6*)>#QP)! [ ]6776P_IT(?G@L/X&DQR;K)
MVG7:^06NRK:U$^0T&PXC1J) Y%<.WRUL5;:-YWB%^\!";<4%7T$0%I!@", (L
M$K./HJR*"JL-^(:;'1I$.?^2>EJQ/ :]MUKU;K,Z3/>^^[ ]4=L6_X\//K/<?P
MY^~EX9(>_CASV.4X]"N'\X/+0=DD?[%#YACY/-./CLR6\INL40:/K22_TD'*
M-UA)^~/PN\XJ_QMRRR_I2GJLQQEY'8)==SGP^?Y[0R[FB/U0-MKU1J$UNA-9
M!]!WCM@EZSV@L?NL YP*K )@M75 KP)K ;C?..L"K0!T 7MA3U/5>S^DWRH%4
MX3 %W\Z_QPIC( #5=I0#\UVI" '81T=#E-;(/3^<' _UGQATQ#Y\R J<+1J
M;$;) M<?X\@=#\^'SQ0M1%7'&$@JT<LR-G8&NA6UXU55L6=LM'D7>@N]"-
MU -D.R.' ]5Z0Y$IO-% V&%3\@9V)1<Y>1\LXK%:@P( )G)F(N0, _!S+&:=X!
M'IS5B;P1UQA"RB+B3\AK,KSX8L1U%4Y,$)%1YD0^ZWAD2182&"4CV!K/$ME!
M$ZKSR.-Y0--U77+%E4B=?;#LW; >?_ ;P,##MP7[. ?+7%$DP\X&<'ZY!4WEL8
M^N?]A<_M5K)B9X*)>=N_B/"JA83@D7V/60<(4=#ZAX<81/<J)FS-M8V>([P
M. ?;FVDAVKLT<%A62S]M(OA%^33;BYV1GPOOP,%( )4_58VQ)E_4Z&^\!AQ\,
MH-)/B_7=[V]\_C/<7F]-3C"@-<&JAJLK" ^OAW_$BA.OM)6&P;G]@:_@N<9
M4 ([S+Y9E" X[ASS_0!_WA7N.=EUM">\>L7E%TK#03U_VWEIYRD\C(\NEP00
M=H.O6IZ&ME^KM G&RBR!J\POY=*P\JDY+!B6]9K"HFYQ\>EX60G9NQ?<:M#
MR.<$E0^>AD^E0V3VK$!?'8YF)[SL>V#MZZQD76==S0X57\ 'GG8K0[_@SJ>1A
MZ[ELR8^";/S/E^TWACZ\+%O"D@N5D.(Q%D,$KI9K=6!+.&R^U6KH@? NNQJ_
M_$ (A'N-)^2:K0$ 7?(O!)PW[-EA!<6QT[XVR\"%"I*7!8>;2 1K-5R0#U72P
M*M=F$ 4@O3(#NSA-[=).EX/PN;:RL((T6];A5@Y_E_]7Z:B(B,8(W^D 3\G%
M(FSH=$C;N;WP7<-06)&^[>(7Z/%WV!@,JB5.:F'V=M#-0%3>X5",.,&V\I+(
MX!$]AQ24V@DLE!TK(J3)+$)KW/(5!-YUD;H@![S, @I2#0,XE"'"0 5C= ?6;
M#]ZT>894'G+03=KVY+EI#)LUO =Q1&]&16,$(J4JY$ "BH4[>2[S*,ES>Z< C
MH/';,8=;! (N=J1CR94 $9!&05YF/N8J(+LCCR:\) $D\%PM\!6P2/ZB3'4 A
M)215U_>OT"ZBJFPPS[1"H>:(_QC5B-2@V "Q\..S0&@-'D/XG?8WD0X&YF.B
MJ>(<_F0F=;/^>VA$ )>DZ*P!Y3P*L&?)6>"YWD0U&\L(Q'7=834?(<+N$*&
M3A>I](FFPSHZ!X[P[4 KV2[F'&980 S0208ILV&RGDYFI$WJR\+1GZ(0!Q1<
ML.X4\@*53M$)0T^@X7NC6$BG1;V*@B-%<9+%(3Q&2>B ! (LHJLBW?X"JE2)U
M@QG&@?:5\6JD6/8^:2]"8?,8CKR$ H)>G8WP1MM/<R"C24LA[^#UG&3 D'R0
MFG>&>"U=<I!\C*"/;E?<W>U*N&62 ,<!\V\T-M'!HQSQ(<<0?)WY>+H= X3MK
M.%-X1]9(#4<B-0Q'8)' :4 WWG%MNUGMAE[ [ ]7@8Q XAQV'9$=1P82#[PC^/
M0$4??,L(6&:/7, [J365C$A-)BAW!IQ,X\H$.VF, JBQ[>8\&AP)'?)&K00
M2Q7F80^0<"JZZH[R!P1?I+XFTJ5L)=, #LE!N[632V?U&7)-,2)0I\WSR' 4
M>U-8XXD)+"@SJ,4LMZ7H4>1I(1<' $GN >8I]9 (;K^3Z^\ 'MCMA]C,*[Y3N0
```

M@^<,<52EH&?GN\YC_ =5' ['2.2:D9 H>/15!8-9L!9 .SDXWVMMBM[N,V&5\ M*: 3#6J-D:~I9WR)@XF6J?@20L3I,9<Q@%0I6\$"BA<0"-#@A<-6UZ[%CT. MNE: J8I&+2"B\$5;3HK4[*LT./1Z*Q(X^4>]5;J^JH"X7)J^ ND;-NE.GL= M/;I'S0ITM<6KF8]52^9+P(0=?,\&AP<\$R(6)(H*~;A-.??(=[/0)XH)%AF! M*E-@X\$F:J7.51%/JKTLV_1*A[WP!4%CP%Y5)/P2?:SY(Q\Q ^0[/K&CNU M]62E[-/AE7SL30:]JCF]B:'1*8/80_WRD7'2M[~T90~2L,A,8-K%Y&Q+!1(MHP)F^ME8RH!0QL BZSF\"(^ 2#"*U3+5H%Q ++3S;2;%C#^J#2PUB2P!A)&5 MX!-?@JRI^%\$-2RNW1_YQANKZ-+_<&VPUZ<3<8'5J!2=_ENQ9X.(+/,:V1YD- MB0@'CEYCE&I,Q _(.IX+71^S4-8!*~3T43-K-)A:\$%)L<IIQYC48XQ0\$(\$Q MEE(U@EG<&@TOI2%\$N 5)/ "[\$E L*!>^22/?@D?N!!Yw#<T857E00PFW8 M4W?8@FC 3<~U3!%BER!6U'ODYXU>"#L<604R_WW#^E2/HH4T*[]#B,!KDB1/ M_S&UN<29PZUF\$4C MS/4^8"(V(V)=R6 /> M +1#CJ %) &+)KN8)'\$"\$0+ (MFVX@.I09DDUJ3/@A4ZB6]*/H7Q#A6@S 2*Y.,*<(10<I50 *M0!(F.Z15Q'0 M\$T~77D3*OT>?1~&J5CL2%P],LU6,B+=K+ \CT*:H!W;)C?~I7QU\$H%1E7TKN MHPFJ~VX724J]B\$J]1(>\$8@T>Y[T4,JA*9GIDE-Q"R!K9XF4>7"T/ZAZ"KE MJ*0M@#NWS-&J1.70KPFY>.J(*TW88P20S@RV\@BZB'"%2TY\E_)6C6 :@#M MB'T (1~W>G;T:~HC8@(-JJE/A-U&IHUO)Z3-KVJF%Y02 *7D#~BH4J!1"=A! M=(NFJBQ<57R\$;X59L*.0DW(WL-(-T I(P8&H1##*#3E>S.8R% 2>9G*)'@2F MOD&/%)::B;~BPO.V%W)4 6;5R0=CD\$5XVOV!HJ#ZJPX_!T(6]M"=+3SLU(FT ME!AI@4&359*?.PQ=L);<439K%K<!OSMR/(7Z@5B,Z03./N_6R06CK,FHW* M\$32#:NE2V:7^2(M9L"437(?F7"%3GL=!3')>K3)%TEHNM4W7!Q.6EHP!'E+N MLBM*'LTP\$<@PA-SDOQ2YOPJ?H99+(=#BY9:SKJ@X\$'HY:'"C3<D!9EDD0-C-M)C3L5HE?0LC!,J=&9N[\$LDG0707KT'V=UV)2*RLN8_42!OFRP M&S~7@(.K& MT&W\~DYAJ;;D3CTQ6'R)^*'(!0AGRP>1=>&=<WFK "7PF0K]RMK 0FG5] M[!DKRMRS%_FU==>GY*HNN76&.+A0;\4X7'J>56QK!QCDCIV:\$W:OIBCO0K=@ M5\$]I?YJRM Y'G,-IF;Q_J>K<QK0B>N52TG7;SX?0A&#-5):K*)WA:9."G:< M1\$]HR^V_!RW2H([4T4)@N]3Q!.E^094HCY.>)PC^30LAL !=7,=3I-(D<B-< MEBL\$XT[.U=W120!QY]~V:-A:JE0HX1RKHP-5XJ=4!7;X245\$F!,<]!/@B[IM M%ASC&A-86')&E%77N.#@\$P0);%0B*3HX8@[!2R:I+4RC-C.-6@902U+2P\$!- M79/B&X5<JFD:BI14/<?*]5>GZS+'/:GVW >H8G_Y52HG))L*"S/1[T.]FQMS M!0P2^~B(#JEMC)HOZU,I>N)X3;W]RT(NT~VV,[CEQ5_MF>B='9XZ'G(/>~)Z M8W!_08' N..;RUV9>*5V>9W=^0%(\YA')PMK8J=C)X"G4[3]S+N<9Y[~8 MY6=BESLMKG,9RE<4@B&DZ/_J7GDF=HK]<WQEB+05U,QQ=RD LX^)ZSU[H0[W0 MT9I2%3E3;];5:C2:IIRT]52'<M:X55-Q]NG<??5N^:')P"OJD#@2:8^I*Y5 M?]T:%'23.%\$6%I!'"UB'/H7N-_W.\$8X-/ 3.R3' '= T#9B0&_@/\$LD.9![M"\$3#0 %= >(AV52-J[>,F6HA@59>#5GZX*-#63L=W.79V.=SR'FC/U\$IT=\\&K MI<W!~VI;U0BZ&_H>T#^GI977+TPD_CC<T4#[]TKI1?;2@6Z10.^I#F.CSFL[M8]30 0/"BM'HY1>:=2] 24FEN/[EM.I0RU+[*#4\.,JX3>Z[K[QC/V0WJT M*_D.<^B;~RSVTX[W>AC7VKY*#T)\51I:W:E"130[JM# 2C"NF5E[Y8=_CV M->X!)@E ;H+FY4&0;^X 6@9K,RH\"5_F=GV%*^Y3E6_2I#S18)206!>JKI I MK==F* ,M"R%;&I\$(M=>\$CP>']!5#8K[6=TW R<X%Z-V!6WBVLG9!9=U-S4S+ M.\$0G1&:>60=%TT2_PJ45HX#^6XHG6[UZ@2,W<ND;I/P@I1#6SL7I<6CM\$LE M[6CH/%SP"+>C'+*GUMITUA*5;\$\$.= @F]3J8)>9XP-&~J48FBM16(?)H(IF MNPNI?02TP9~-T AM@N#R2TMB,2W9<-4YD9B@_00(?S%W^>=0Q(7W4&BSR9; M@#NUJ!4D_X/L:_OBYBT0NBW,7#GZ-.\$LBL6J@V-.\$MM[0?M225^;USKC;3Y M:A>7G")-50^C=@W\$S5 R,*B&/?*;X/PW-^Y@%:^SE/.'/I;753K### RF' MN(PA YR\$DR%-BHBK>=:I.KF=EP#UFW^E41= W]-]2N 4R[=A5<>XP:F_BZ M6C 35M:\$LFCR@01;-C-29TP8#[C.3IY,%LG7;VCGOJ^U#MJMEA17.:AS>+A# M7.Z?(09X:.28?*(W-.)X&[Z'U/\$0'4_<=&=0/[T;T*;,7&A37RVYE<1U\$,'V MBXVNV#<J:]<K'RYU;%V]1J^VW7 .09?;LH^9@HNJZUM[OU@%![[IA/@XC M:7 KP?375\,KF9!7623D:C3+LB'B/)5.2DUY^@V'A<XI<]J[4XR=2SX](M9X)((AW;"(0%WPKNOVEG^*C^&1 L07&?]<~&_KM"3L>7C(3^=GH-SA\<01< M"?G]YEF0S-HS2]*L^V?>+> 7/%+P>,&.@I.S7BWH+GBFX-F"1;.CLT.S>V?? M-_)>>M67^>%?V\$#Q V\>"<9.^24=GZ=C1GF:CC\.#(KP;,)U[A9)M(4\$ M?<C1M%K^JB/4!P:C'Y(%I-K.V(-%IXVOZ:*K2;23I:]L^J"+8P(WF.8. M":1YC8TN@V<^D\$4B7>CBZ@4/.'KW'100*56V][#C"WSWF-V0FX< \$^-OHQ M/CKZ>C'() .9J+C";KWQ9VP%U:[TU=]/JW!#T]YCYZ,-\$(XA*8/<"P.,) M=40G PC@/R8.&A730;AL'LS]8Y0Y/=(A\$C32T410Y^Y&HK)==DS).VBB<[J] MN3VUM9*?IZ+FTCOK# !;N>[!IX 9L0S>OKX='01)"Y43=ZSC9R;[Q&A'P, M&XH@9+A7;U.85VVA(?GU&V>01:,W*+O<&G==*/<.P0GN=?*96/Y!KP;Q#06 MQD8MMJA=/1U.[1Y~DD!")XN6+Y?@V@PDX3\J<I)@OD>;> /OKE[XFW-C1*^ M0D4>[~YYDD#Q^8#2K!AM8_ H7-N W(1,U#5Y!BI\$Z:>2'IZ@HR?3UK55(+50 MH7A6@YDHTK?HF.L*FR.BWFHX'+;I^,5/3Y(R1B^HW02R<,\$)! [L(1[5K>[^M55-D[1K(2_ J)LJA3YIF"#%15P)N)#,? GI #12T(04_R!UT/:'\"^#"CJA M<W\$:GY0GT.9TO!M~Y%BK65X7=XZV<M)N/PF!'2'.+,6!)0N%[. !/]%)\$81JM M*N[4RW?<4RUS&^VD0&]RL42/1+S0[K](%X\$SP?T):PC8] *PBEKW!7(/Z\$ MH_\$'Q MU%#5])Q#"3([5 2\$6 C4I=-G*GR?3?YD_)Z*4VU7Z1QD0<R^V^0/ MQD,=C41^9QP#5#\J-YWO.4\7A[C*A? D;X,G>=H*-XO_~OXBGMOV0G?. #M^ M/7[V@&SSG>*]R<3!200&C[E?F0K1GX?3CE*<('A@'4^:QY0RC\&KQH&7 MJ6^Y7F9>0<62/KIC:'\$.*H9+W%<F5XY"(Q+% Z\ON':Q<@Z=7&~J7Q11JKX' MJ^#]7)A+W~YQ&Z\]H<-C.#R2^I#J>8)'@XE@1.\$E*/ZLD20=G"\$G\$Y/']/A M*BM5P6-Z9N98];TG(4Q'OD^.?F_,)Z(4<%W^\$0IQ%X_)9/1^%:U^'8U_ (MH51@*SR%;V=B'0S!U1EV5L!*)I @,Z"@:&'GE?U*MD\$G@YE_=\$0?0%?7UZ MR2*9J=-;F)@~B'DH'2&;JDQA&,*W/,8X@4P9@',#A^A]<C?@G?S*?9!]'9! MF= !BQJ\$_K(!S1+U<2>C>IXEW>?H_>F[Z?_T;6Q:N-RVT+: \:=L_~1JV_% "P MW?+(MOM=RY>:%06Y-M_W_BH;46CL+4\$U33X&Q[=9-OD~S7YLDQW;VQL\CU> M0J6V5=>T05?_N\$W8Y'N\H;%>:&AJS#*A_^/G5P[Z@[_?6SW-]=OV727[1'? M\$Z5;-]L:&C<W;-UDNZ5)%A@0GY-J+M&Y&F;503MDV-8#U; ;/4VNJIJ=SK# M<'K>:#1:9NBGDWQ]'D/2/WH]F?>)(? ,8^(<+=\$ (81I_#:\$/M,T_[FD[0.RS]

```
M@1-RZ3$9S"3/TVP(F1C=! .P F&$F$4H!7LZP$ _ R@)?!@TOJL\9&0\D$0'$*
M[]L" _V0*_ _+,I\+, @5^= @]-@8]-@<].@2]-@1G[S?"T*;!C"EPZ!5YFU]D8
M^.&>9YXG ^L'51-UV ?0<Z.2^?/G([3-U] HV)H?J6<;+0+MGEK$P06., "V
M)CJ]F4:>T&QK;! )L6QL:' ]OT*$1<%KJE4=RZ=0&Z[?;2LCN^4[YH\9UW+UM>
M\UT7LEATEAD6^##(PG*6#'WJ8YG\Y,S,,<(?@R5_8BIK<C77E).38S19++QE
MFCG;8LFS9$ZNHSZFCSG(W&&Y4_WY;U!+ 0(4 !0 ( (,\GQTY&,_ ,C14
M $8A * ( !#4E@R3$8N0T]-4$L%!@ ! $
* . +45
```

end

34. Re: [DSP-93:36] Program to fix text files

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sat, 31 Dec 1994 09:29:33 -0600
To: dsp-93@tapr.org
Message-ID: <ab2b28b3000210040d53@[198.3.118.134]>
Rendered body type: text/plain

>I found that the text files on the disks were unreadable with any utility
>I had. I dumped them and noticed that the end of line was 2 carriage
>returns, rather than a cr-lf that DOS likes. I wrote a really simple
>program to convert these files to cr-lf. If you have a similar problem
>here it is. It's written in standard c so if you want a copy of the
>source, let me know.

I don't have the diskettes but I have the .zip file that was supposed to be
put on the diskettes. I "pkunzip"ed them and the text files looked fine to
me. Line ends were CR LF.

Are you referring to the text files on the top level of the diskette or
ones in directories "inside" the .zip file?

Ron W5RKN

also:
w5rkn@amsat.org

35. CR/LF probs

From: hammond@camel.campbell.edu (Mark L. Hammond)
Date: Sat, 31 Dec 1994 12:52:00 -40962758 (EST)
To: dsp-93@tapr.org
Message-ID: <9412311752.AA03600@camel.campbell.edu>
Rendered body type: text/plain

Jim,

I am surprised and disappointed that you had problems with the text
files. All of the beta-group has looked them over (with whatever
utility they had handy...) and you are the first to indicate a
problem.

First, are you using IBM-ish or MAC machine?

Did you try the EDIT program that comes with DOS?

If there is a problem, I would like to know. It may have come during
the mass-diskette production. In any event, we need to get these
files easy to read. They should be regular old ASCII files. I can
view them easily on both IBM and MAC machines no-sweat....

Thanks for the conversion utility, and welcome aboard to the DSP-93
group!

--

Mark L. Hammond, KC4EBR
hammond@camel.campbell.edu

Campbell University
Department of Biology
Buies Creek, NC 27506
1-919-893-1734 or
1-800-334-4111, ext. 1734

36. Re: [DSP-93:35] Re: IMPORTANT README (Wall Transformers)

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 31 Dec 1994 15:04:06 -0600 (CST)
To: dsp-93@tapr.org

Message-ID: <199412312104.PAA20162@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi James --

That's okay. Seems like everyone does that first :-)

Please send it back since I can get some money for it from the local parts dealer...will offset some of the cost.

Leave the plug on it....

I'll make a note to include a new plug in yours
Just went into the next room and pulled you box and made a note on it.

Greg

According to James W. Lynch:

>
> Greg,
> I received a 1 amp supply, but have hacked the new plug
> onto it. Still want it back? Should I cut the plug off
> and save it or will the new wall-wart have the right one?
>
> Thanks,
> Jim.
> -----
> Jim Lynch Fayetteville, GA K4GV0
>

37. Re: [DSP-93:38] Re: Program to fix text files

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 31 Dec 1994 15:33:14 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199412312133.PAA23454@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi James,

I'll let Mark and Ron respond to this since they put the disks together...but I just went and grabbed a set of disks we did here and was able to unzip and read the file with both Word for Windows and List without any problems. No extra lines.

Cheers - Greg

38. Re: [DSP-93:40] CR/LF probs

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 31 Dec 1994 23:16:04 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501010516.XAA25766@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to Mark L. Hammond:

> If there is a problem, I would like to know. It may have come during
> the mass-diskette production. In any event, we need to get these
> files easy to read. They should be regular old ASCII files. I can
> view them easily on both IBM and MAC machines no-sweat....

Mark. I checked the files on both my Mac and PC this evening from a set of disks that were in the duplicate pile. They looked good on both machine. The top level file did have extra LFs though...not a big problem, since you read it only once. That is the Manifest and readme file I believe

Greg

January 1995

Original source file: dsp.9501

Source: http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9501

1. Re: [DSP-93:39] Re: Program to fix text files

From: "James W. Lynch" <k4gvo@atl1.america.net>
Date: Sun, 1 Jan 1995 07:30:44 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <199501011230.MAA26862@america.net>
Rendered body type: text/plain

>
> >I found that the text files on the disks were unreadable with any utility
> >I had. I dumped them and noticed that the end of line was 2 carriage
> >returns, rather than a cr-lf that DOS likes. I wrote a really simple
> >program to convert these files to cr-lf. If you have a similar problem
> >here it is. It's written in standard c so if you want a copy of the
> >source, let me know.
>
> I don't have the diskettes but I have the .zip file that was supposed to be
> put on the diskettes. I "pkunzip"'ed them and the text files looked fine to
> me. Line ends were CR LF.
>
> Are you referring to the text files on the top level of the diskette or
> ones in directories "inside" the .zip file?
The ones on the top level. Like manifest.a[12] and readme.now.
>
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
Jim.
>

2. Re: [DSP-93:43] Re: CR/LF probs

From: "James W. Lynch" <k4gvo@atl1.america.net>
Date: Sun, 1 Jan 1995 07:43:09 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <199501011243.MAA27011@america.net>
Rendered body type: text/plain

>
> According to Mark L. Hammond:
> > If there is a problem, I would like to know. It may have come during
> > the mass-diskette production. In any event, we need to get these
> > files easy to read. They should be regular old ASCII files. I can
> > view them easily on both IBM and MAC machines no-sweat...
They aren't in DOS format. DOS expects ascii files to have cr-lf line
termination. These beasts have cr-cr termination. Maybe that is a MACism.
>
> Mark. I checked the files on both my Mac and PC this evening from a set
> of disks that were in the duplicate pile. They looked good on both machine.
> The top level file did have extra LFs though...not a big problem, since you
> read it only once. That is the Manifest and readme file I believe
>
> Greg
>
For clarification, the files I was having trouble with were the manifest
and readme files. Not the ones inside the zip file. I never got to them
'cause I couldn't read the readme. I don't use the DOS edit, but I tried
vi, qedit, list, type and more. None of those worked. I just tried
edit and it displays them after a fashion. It seems to take a single
cr as a cr-lf, so it double spaces everything. It's not a big deal, but
I've got an abundance of ways to read files and if you're gonna put out
a file that only can be read a special way, maybe you should document it?

Try typing or "moring" those files. Anything other than edit.

Sorry for all the fuss. Does everyone in the world use edit except me? 8^)

73 and Happy New Year all...

Jim.

3. Re: [DSP-93:45] Re: CR/LF probs

From: creek!hammond@camel.campbell.edu (Mark L. Hammond)
 Date: Sun, 1 Jan 1995 13:25:35 +0000 (GMT)
 To: camel!tapr.org!dsp-93
 Message-ID: <m0r0QHw-00005jC@creek.UUCP>
 Rendered body type: text/plain

Jim,

I'm glad you spoke up on these files. I just ftp'd the original files I posted for distribution, and all of the README.NOW and MANIFEST.A* files are indeed in ASCII text, DOS format.

Personally, I use qedit to edit files and use list to view them. They look fine either way. They also look fine with dos edit. They also cat and more just fine on the UNIX box, and the vi editor liked them too. Hmmm....

As the "originator" of these files, I can assure you that what I released to the group and what was SUPPOSED to be distributed were plain old DOS ASCII files.

I guess that these files somehow were "queered" in the mass-production of the distribution diskettes. Or maybe Greg ftp'd the files using ASCII instead of BINARY?

Any comments Greg? Any hints as to how you made the distribution diskettes? What I posted on tcet is still okay.....

They were intended to be easy to view, Jim. Type|more works, and a regular old dos print command should print peachy, too. Sorry for the trouble, maybe we can get this straightened out for the next diskette set!

> They aren't in DOS format. DOS expects ascii files to have cr-lf line
 > termination. These beasts have cr-cr termination. Maybe that is a MACism.
 > >
 > > Mark. I checked the files on both my Mac and PC this evening from a set
 > > of disks that were in the duplicate pile. They looked good on both machine.
 > > The top level file did have extra LFs though...not a big problem, since you
 > > read it only once. That is the Manifest and readme file I believe
 > >
 > > Greg
 > >
 > For clarification, the files I was having trouble with were the manifest
 > and readme files. Not the ones inside the zip file. I never got to them
 > 'cause I couldn't read the readme. I don't use the DOS edit, but I tried
 > vi, qedit, list, type and more. None of those worked. I just tried
 > edit and it displays them after a fashion. It seems to take a single
 > cr as a cr-lf, so it double spaces everything. It's not a big deal, but
 > I've got an abundance of ways to read files and if you're gonna put out
 > a file that only can be read a special way, maybe you should document it?
 >
 > Try typing or "moring" those files. Anything other than edit.
 >
 > Sorry for all the fuss. Does everyone in the world use edit except me? 8^)
 >
 > 73 and Happy New Year all...
 >
 > Jim.
 > -----
 > Jim Lynch Fayetteville, GA K4GV0
 >
 >
 >

--
 Mark L. Hammond [KC4EBR]

4. Re: [DSP-93:45] Re: CR/LF probs

From: bonzai!hank@aluxpo.att.com (Hank Pustarfi)
 Date: Sun, 1 Jan 1995 10:55:20 -0500 (EST)
 To: tapr.org!dsp-93@aluxpo.att.com
 Message-ID: <m0r0Sscr-0005TnC@bonzai.cnet.att.com>
 Rendered body type: text/plain

>>
 >> According to Mark L. Hammond:


```
>> > If there is a problem, I would like to know. It may have come during
>> > the mass-diskette production. In any event, we need to get these
>> > files easy to read. They should be regular old ASCII files. I can
>> > view them easily on both IBM and MAC machines no-sweat....
>They aren't in DOS format. DOS expects ascii files to have cr-lf line
>termination. These beasts have cr-cr termination. Maybe that is a MACism.
>>
>> Mark. I checked the files on both my Mac and PC this evening from a set
>> of disks that were in the duplicate pile. They looked good on both machine.
>> The top level file did have extra LFs though...not a big problem, since you
>> read it only once. That is the Manifest and readme file I believe
>>
>> Greg
>>
>According to Jim Lynch
>For clarification, the files I was having trouble with were the manifest
>and readme files. Not the ones inside the zip file. I never got to them
>'cause I couldn't read the readme. I don't use the DOS edit, but I tried
>vi, qedit, list, type and more. None of those worked. I just tried
>edit and it displays them after a fashion. It seems to take a single
>cr as a cr-lf, so it double spaces everything. It's not a big deal, but
>I've got an abundance of ways to read files and if you're gonna put out
>a file that only can be read a special way, maybe you should document it?
```

I mcopy'ed the files to a linux system and had the same results. The files had to be patched to make them readable.

Hank

5. Re: [DSP-93:45] Re: CR/LF probs

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 1 Jan 1995 12:29:03 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501011829.MAA29317@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

I'm sure Mark will get this fix for next round.

Cheers - Greg

According to James W. Lynch:

```
>
> >
> > According to Mark L. Hammond:
> > > If there is a problem, I would like to know. It may have come during
> > > the mass-diskette production. In any event, we need to get these
> > > files easy to read. They should be regular old ASCII files. I can
> > > view them easily on both IBM and MAC machines no-sweat....
> They aren't in DOS format. DOS expects ascii files to have cr-lf line
> termination. These beasts have cr-cr termination. Maybe that is a MACism.
> >
> > Mark. I checked the files on both my Mac and PC this evening from a set
> > of disks that were in the duplicate pile. They looked good on both machine.
> > The top level file did have extra LFs though...not a big problem, since you
> > read it only once. That is the Manifest and readme file I believe
> >
> > Greg
> >
> For clarification, the files I was having trouble with were the manifest
> and readme files. Not the ones inside the zip file. I never got to them
> 'cause I couldn't read the readme. I don't use the DOS edit, but I tried
> vi, qedit, list, type and more. None of those worked. I just tried
> edit and it displays them after a fashion. It seems to take a single
> cr as a cr-lf, so it double spaces everything. It's not a big deal, but
> I've got an abundance of ways to read files and if you're gonna put out
> a file that only can be read a special way, maybe you should document it?
>
> Try typing or "moring" those files. Anything other than edit.
>
> Sorry for all the fuss. Does everyone in the world use edit except me? 8^)
>
> 73 and Happy New Year all...
>
> Jim.
> -----
> Jim Lynch Fayetteville, GA K4GV0
>
>
```


>

6. Re: [DSP-93:46] Re: CR/LF probs

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 1 Jan 1995 12:37:53 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501011837.MAA00608@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to Mark L. Hammond:

> Any comments Greg? Any hints as to how you made the distribution
> diskettes? What I posted on tcet is still okay.....

What you posted, was what went out :-)

The files on TCET do have the ^M at the end of each line...just need to fix this in the next release. This is for MANIFEST and README.

Although as you reported, I was able to read the files in with everything I tried. DOS: list and edit. Windows: Word for Windows, Word Perfect, notepad. Mac: MacWrite Pro, MS Word, Simpletext. Unix: vi, more, less.

So, looks like Jim just got lucky :-)

Just need to make sure we remove the CR/CR next turn.

If this is the biggest technical support problem we have -- boy are we all going to have fun with our kits !

Greg

7. MANIFEST.A1

From: gjones@tcet.unt.edu (Greg Jones WD5IVD)
Date: Sun, 1 Jan 95 12:56:44 CST
To: dsp-93@tapr.org
Message-ID: <9501011856.AA171557@tcet.unt.edu>
Rendered body type: text/plain

PKUNZIP (R) FAST! Extract Utility Version 2.04g 02-01-93
Copr. 1989-1993 PKWARE Inc. All Rights Reserved. Shareware Version
PKUNZIP Reg. U.S. Pat. and Tm. Off.

~ 80486 CPU detected.
~ XMS version 2.00 detected.
~ DPMI version 0.90 detected.

Searching ZIP: DSP93A1.ZIP

Length	Method	Size	Ratio	Date	Time	Name
0	Stored	0	0%	12-12-94	02:54	DSP93/
0	Stored	0	0%	12-12-94	02:54	DSP93/MAC/
0	Stored	0	0%	12-12-94	02:54	DSP93/TASM/
0	Stored	0	0%	12-12-94	02:54	DSP93/WIN31/
257024	DeflatN	194256	25%	12-11-94	18:51	DSP93/MAC/MACDSP12.HQX
140964	DeflatN	138152	2%	10-23-94	19:44	DSP93/TASM/TASM30A.ZIP
424080	DeflatN	147887	66%	12-10-94	20:54	DSP93/WIN31/D93WE.EXE
37121	DeflatN	15469	59%	12-11-94	10:25	DSP93/WIN31/D93WE.HLP
1315	DeflatN	513	61%	12-12-94	20:36	DSP93/WIN31/D93SCOPE.OBJ
6288	DeflatN	2229	65%	12-12-94	20:39	DSP93/WIN31/D93FUNC.G.OBJ
4946	DeflatN	1946	61%	12-12-94	21:54	DSP93/WIN31/D93SPEC.OBJ
1933	DeflatN	604	69%	12-12-94	20:37	DSP93/WIN31/MEMTEST.OBJ
1348	DeflatN	579	58%	12-15-94	12:46	DSP93/WIN31/D93WE.INI
875019		501635	43%			13

8. MANIFEST.A2

From: gjones@tcet.unt.edu (Greg Jones WD5IVD)
Date: Sun, 1 Jan 95 12:57:02 CST
To: dsp-93@tapr.org
Message-ID: <9501011857.AA171568@tcet.unt.edu>
Rendered body type: text/plain

PKUNZIP (R) FAST! Extract Utility Version 2.04g 02-01-93
Copr. 1989-1993 PKWARE Inc. All Rights Reserved. Shareware Version
PKUNZIP Reg. U.S. Pat. and Tm. Off.

~ 80486 CPU detected.

~ XMS version 3.00 detected.

Searching ZIP: DSP93A2.ZIP

Length	Method	Size	Ratio	Date	Time	Name
-----	-----	-----	-----	-----	-----	-----
0	Stored	0	0%	12-12-94	02:54	DSP93/
0	Stored	0	0%	12-12-94	02:54	DSP93/ASM/
0	Stored	0	0%	12-12-94	02:54	DSP93/DOCS/
0	Stored	0	0%	12-12-94	02:55	DSP93/OBJ/
0	Stored	0	0%	12-12-94	02:55	DSP93/TAPR/
0	Stored	0	0%	12-12-94	02:55	DSP93/UTIL/
92	DeflatN	84	9%	10-24-93	18:41	DSP93/ASM/ADDENDUM.DOC
9167	DeflatN	3327	64%	10-17-94	03:31	DSP93/ASM/ALLMONH1.ASM
9249	DeflatN	3353	64%	10-17-94	03:32	DSP93/ASM/ALLMONH2.ASM
9245	DeflatN	3332	64%	10-17-94	03:32	DSP93/ASM/ALLMONL1.ASM
9329	DeflatN	3360	64%	10-17-94	03:32	DSP93/ASM/ALLMONL2.ASM
56	Stored	56	0%	10-17-94	03:26	DSP93/ASM/ASM.BAT
14451	DeflatN	4441	70%	12-12-94	20:36	DSP93/ASM/D93FUNC.G.ASM
2838	DeflatN	1175	59%	10-24-93	18:41	DSP93/ASM/COPYRIGHT
12542	DeflatN	3018	76%	10-17-94	03:38	DSP93/ASM/CW_93D.ASM
912	DeflatN	257	72%	12-05-94	03:50	DSP93/ASM/ASMALL.BAT
5505	DeflatN	2176	61%	12-12-94	03:28	DSP93/ASM/MONITOR.INC
15237	DeflatN	4752	69%	12-11-94	10:22	DSP93/ASM/D93SCOPE.ASM
31290	DeflatN	5842	82%	08-16-94	19:57	DSP93/ASM/HFU_93X.ASM
28244	DeflatN	5481	81%	10-17-94	03:39	DSP93/ASM/HF_93A.ASM
28245	DeflatN	5482	81%	10-17-94	03:39	DSP93/ASM/HF_93AE.ASM
5232	DeflatN	1969	63%	10-17-94	03:33	DSP93/ASM/LOADTEST.ASM
4033	DeflatN	1536	62%	10-17-94	03:34	DSP93/ASM/MACROS.INC
32640	DeflatN	7138	79%	12-11-94	18:47	DSP93/ASM/MEASGAIN.ASM
19925	DeflatN	5942	71%	12-12-94	21:54	DSP93/ASM/D93SPEC.ASM
16940	DeflatN	3873	78%	12-11-94	10:36	DSP93/ASM/MEMTEST.ASM
9088	DeflatN	1851	80%	12-11-94	18:53	DSP93/ASM/MON_TST.ASM
2227	DeflatN	909	60%	04-10-94	09:42	DSP93/ASM/ORDER.FRM
23424	DeflatN	5570	77%	12-11-94	18:51	DSP93/ASM/PKT.ASM
9021	DeflatN	3085	66%	10-17-94	03:35	DSP93/ASM/PORTS.INC
27992	DeflatN	5871	80%	10-18-94	07:18	DSP93/ASM/PSK_93AI.ASM
28031	DeflatN	5890	79%	10-18-94	07:17	DSP93/ASM/PSK_93AK.ASM
33384	DeflatN	6437	81%	10-17-94	03:40	DSP93/ASM/PSK_93SI.ASM
33374	DeflatN	6429	81%	10-17-94	03:40	DSP93/ASM/PSK_93SK.ASM
33401	DeflatN	6444	81%	10-17-94	03:40	DSP93/ASM/PSK_93XI.ASM
33395	DeflatN	6436	81%	10-17-94	03:41	DSP93/ASM/PSK_93XK.ASM
1847	DeflatN	899	52%	04-10-94	09:41	DSP93/ASM/README.RCS
2123	DeflatN	913	57%	10-24-93	18:41	DSP93/ASM/README.TAS
3043	DeflatN	1254	59%	10-17-94	03:35	DSP93/ASM/REGS.INC
9832	DeflatN	3165	68%	10-24-93	18:41	DSP93/ASM/RELNOTES.DOC
5798	DeflatN	2040	65%	10-17-94	03:35	DSP93/ASM/SERIAL.INC
5779	DeflatN	1342	77%	10-30-94	21:48	DSP93/ASM/SINC0512.DAT
45184	DeflatN	10135	78%	12-11-94	18:52	DSP93/ASM/SPEEDTST.ASM
80716	DeflatN	23425	71%	10-24-93	18:42	DSP93/ASM/TASM.DOC
55080	DeflatN	28092	49%	10-24-93	18:46	DSP93/ASM/TASM.EXE
12189	DeflatN	2903	77%	08-03-94	02:26	DSP93/ASM/TASM3225.TAB
118821	DeflatN	22272	82%	10-24-93	18:42	DSP93/ASM/TASMTABS.DOC
5269	DeflatN	1792	66%	10-17-94	03:36	DSP93/ASM/TESTANIN.ASM
11080	DeflatN	3469	69%	10-17-94	03:36	DSP93/ASM/TESTBUZZ.ASM
7438	DeflatN	2098	72%	10-17-94	03:36	DSP93/ASM/TESTGAIN.ASM
5463	DeflatN	1769	68%	10-17-94	03:37	DSP93/ASM/TESTLEDS.ASM
6219	DeflatN	1843	71%	10-17-94	03:37	DSP93/ASM/TESTPORT.ASM
11409	DeflatN	3530	70%	10-17-94	03:37	DSP93/ASM/TESTRAMP.ASM
20707	DeflatN	5167	76%	10-17-94	03:41	DSP93/ASM/TPRS.ASM
10874	DeflatN	2533	77%	10-17-94	21:42	DSP93/ASM/WAVETABL.DAT
3241	DeflatN	1620	51%	12-05-94	21:48	DSP93/DOCS/APT.DOC
1778	DeflatN	925	48%	11-24-94	20:15	DSP93/DOCS/CW_93.DOC
115	DeflatN	109	6%	11-24-94	20:15	DSP93/DOCS/D93WE.DOC
4568	DeflatN	2037	56%	12-09-94	22:13	DSP93/DOCS/FSK.DOC
2520	DeflatN	1194	53%	11-24-94	20:15	DSP93/DOCS/HF_93.DOC
3200	DeflatN	1166	64%	12-11-94	18:52	DSP93/DOCS/INC.DOC
3051	DeflatN	1444	53%	11-24-94	20:15	DSP93/DOCS/LOADTEST.DOC
1630	DeflatN	767	53%	11-24-94	20:15	DSP93/DOCS/MEASGAIN.DOC
26624	DeflatN	9140	66%	12-13-94	02:34	DSP93/DOCS/MONITOR.DOC
4956	DeflatN	2415	52%	12-09-94	22:13	DSP93/DOCS/PKT.DOC
3643	DeflatN	1546	58%	11-24-94	20:15	DSP93/DOCS/PSK.DOC
2821	DeflatN	1312	54%	12-05-94	21:44	DSP93/DOCS/PSK_93T.DOC
1865	DeflatN	874	54%	11-24-94	20:15	DSP93/DOCS/SPEEDTST.DOC
8827	DeflatN	3373	62%	11-24-94	20:15	DSP93/DOCS/TESTXXXX.DOC
2688	DeflatN	1178	57%	12-11-94	18:52	DSP93/DOCS/TPRS.DOC
2434	DeflatN	697	72%	12-11-94	19:18	DSP93/DOCS/MONMEM.DOC
124	DeflatN	107	14%	12-12-94	02:59	DSP93/DOCS/MON_TST.DOC
977	DeflatN	352	64%	12-12-94	03:23	DSP93/OBJ/ALLMONH1.OBJ

977	DeflatN	355	64%	12-12-94	03:23	DSP93/OBJ/ALLMONH2.OBJ
985	DeflatN	352	65%	12-12-94	03:23	DSP93/OBJ/ALLMONL1.OBJ
985	DeflatN	355	64%	12-12-94	03:23	DSP93/OBJ/ALLMONL2.OBJ
3397	DeflatN	1304	62%	12-05-94	11:07	DSP93/OBJ/APT_93B.OBJ
1392	DeflatN	531	62%	12-12-94	03:23	DSP93/OBJ/CW_93D.OBJ
1315	DeflatN	513	61%	12-12-94	20:36	DSP93/OBJ/D93SCOPE.OBJ
6288	DeflatN	2229	65%	12-12-94	20:39	DSP93/OBJ/D93FUNC.G.OBJ
4946	DeflatN	1946	61%	12-12-94	21:54	DSP93/OBJ/D93SPEC.OBJ
13152	DeflatN	7951	40%	12-08-94	12:10	DSP93/OBJ/DSPLOAD.EXE
318	DeflatN	230	28%	11-30-94	18:07	DSP93/OBJ/DSPLOAD.CFG
2189	DeflatN	848	62%	12-12-94	03:23	DSP93/OBJ/FSKISIP1.OBJ
2189	DeflatN	849	62%	12-12-94	03:23	DSP93/OBJ/FSKISIP2.OBJ
2144	DeflatN	833	62%	12-12-94	03:23	DSP93/OBJ/FSKP1.OBJ
2144	DeflatN	834	62%	12-12-94	03:23	DSP93/OBJ/FSKP2.OBJ
4149	DeflatN	1577	62%	12-12-94	03:23	DSP93/OBJ/HFU_93X.OBJ
3767	DeflatN	1430	63%	12-12-94	03:23	DSP93/OBJ/HF_93A.OBJ
3767	DeflatN	1430	63%	12-12-94	03:23	DSP93/OBJ/HF_93AE.OBJ
4088	DeflatN	1564	62%	08-15-94	19:56	DSP93/OBJ/HF_93HT.OBJ
4088	DeflatN	1566	62%	08-11-94	21:30	DSP93/OBJ/HF_93HTE.OBJ
28655	DeflatN	1965	94%	12-12-94	03:23	DSP93/OBJ/LOADTEST.OBJ
4499	DeflatN	1460	68%	12-12-94	03:23	DSP93/OBJ/MEASGAIP.OBJ
4702	DeflatN	1530	68%	12-12-94	03:23	DSP93/OBJ/MEASGATN.OBJ
1933	DeflatN	604	69%	12-12-94	20:37	DSP93/OBJ/MEMENTEST.OBJ
2754	DeflatN	1130	59%	12-12-94	03:23	DSP93/OBJ/PKTP1.OBJ
2754	DeflatN	1130	59%	12-12-94	03:23	DSP93/OBJ/PKTP2.OBJ
2982	DeflatN	1181	61%	12-12-94	03:23	DSP93/OBJ/PSK_93AI.OBJ
2982	DeflatN	1182	61%	12-12-94	03:23	DSP93/OBJ/PSK_93AK.OBJ
5182	DeflatN	1989	62%	12-05-94	11:46	DSP93/OBJ/PSK_93P2.OBJ
3848	DeflatN	1347	65%	12-12-94	03:23	DSP93/OBJ/PSK_93SI.OBJ
3848	DeflatN	1343	66%	12-12-94	03:23	DSP93/OBJ/PSK_93SK.OBJ
5219	DeflatN	2009	62%	12-05-94	11:46	DSP93/OBJ/PSK_93T2.OBJ
3848	DeflatN	1345	66%	12-12-94	03:23	DSP93/OBJ/PSK_93XI.OBJ
3848	DeflatN	1343	66%	12-12-94	03:23	DSP93/OBJ/PSK_93XK.OBJ
14771	DeflatN	4896	67%	12-12-94	03:23	DSP93/OBJ/SPEEDTST.OBJ
375	DeflatN	145	62%	12-12-94	03:23	DSP93/OBJ/TESTANIN.OBJ
1376	DeflatN	391	72%	12-12-94	03:23	DSP93/OBJ/TESTBUZZ.OBJ
713	DeflatN	215	70%	12-12-94	03:23	DSP93/OBJ/TESTGAIN.OBJ
465	DeflatN	162	66%	12-12-94	03:23	DSP93/OBJ/TESTLEDS.OBJ
583	DeflatN	191	68%	12-12-94	03:23	DSP93/OBJ/TESTPORT.OBJ
1327	DeflatN	348	74%	12-12-94	03:23	DSP93/OBJ/TESTRAMP.OBJ
2051	DeflatN	803	61%	12-12-94	03:23	DSP93/OBJ/TPRSP1.OBJ
2051	DeflatN	801	61%	12-12-94	03:23	DSP93/OBJ/TPRSP2.OBJ
1286	DeflatN	726	44%	12-05-94	03:48	DSP93/TAPR/AMSAT.TXT
7698	DeflatN	3421	56%	11-30-94	17:47	DSP93/TAPR/DSP93.TXT
7613	DeflatN	2254	71%	11-30-94	17:48	DSP93/TAPR/PRICELIS.TXT
5272	DeflatN	2213	59%	11-30-94	17:48	DSP93/TAPR/TAPRINFO.TXT
56732	DeflatN	56664	1%	12-05-94	23:45	DSP93/UTIL/9600MODS.ZIP
13152	DeflatN	7951	40%	12-08-94	12:10	DSP93/UTIL/DSPLOAD.EXE
318	DeflatN	230	28%	11-30-94	18:07	DSP93/UTIL/DSPLOAD.CFG
111582	DeflatN	111256	1%	11-30-94	11:33	DSP93/UTIL/TOR307A.ZIP
-----		-----				-----
1349141		503335	63%			123

9. README.NOW

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 1 Jan 1995 13:00:01 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501011900.NAA02774@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Just for everyones info, the README.NOW is also reprinted pretty much as is in the file as the Software Install Procedures which was included in paper format. It is also the same on both disks I believe.

I am also posting a the MANIFEST files on the list here.

Cheers - Greg

10. Re: Comments on Doc changes

From: Bob Stricklin <bstrick@tenet.edu>
Date: Sun, 1 Jan 1995 14:36:07 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501012036.OAA29397@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain

Here are comments on some of the changes and problems found in the DSP-93 documentation. I have not commented on the things which were obvious or really did not need a comment. (Bob de N5BRG)

1. On page 3 of 3 Digital:Power Supply
C118 & C119 are drawn twice :
C119 once as a by-pass caps 0.1 and again as a 4.7 uF filter cap.
and C118 in the power supply filter and in the by-pass cap drawing.

Change C119 from a 4.7 uF to a 0.1. Remove the extra C119. Change the extra C118 to C123. (Bob de N5BRG)

2. I can't find C123 on the diagram. I am guessing it's a by-pass for U116

This is correct and the value of C123 is 0.1 uF. Add this to your schematic (Bob de N5BRG)

3. On page 2 of 3 Digital reset and Clock:
C110 : The value is not given just the label CAP

The value of C110 is 0.1 uF. Correct your schematic. (Bob de N5BRG)

----- 3-----

The LED flats are small and hard to see it might be a good double check to mention the SHORT lead (cathode) goes in the square hole. The bend is about where the marking crimp's are on the leads.

LED leads are not always cut this way. We should mention this in case they are. (Bob de N5BRG).

----- 4 -----

My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16

Change the docs on page 15 and 16 to indicate 22J. This can change each time parts are purchased. (Bob de N5BRG)

* Page 7, Socket Install

It has been suggested:
That header J100 be installed before the U114 and U115 sockets are installed, due to the tight fit. (Jim de K4GV0)

If you have not installed J100 leave it off. This jumper will probably never be used. Save the jumper for use in another place. (Bob de N5BRG)

* Page 9 (C113 and C114)

It has been suggested:
If you are putting zig-zags in the leads of the 0.1 caps to make them fit the hole spacing watch out for C113 and C114 as there are small land-holes between and the solder might wick over if the cap leads are touching the board at that spot. (Bob KC5EJK)

The solder mask should be changed on future builds to cover and fill the via holes. (Bob de N5BRG).

* Page 10/col 2

It has been suggested:
P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together. (Jim de K4GV0)

I have soldered a number of these connectors to boards by just placing the connector flat on the PC board and filling the three holes with solder. I used a 25W soldering iron. This method works. (Bob de N5BRG)

* Page 17 (JP208 2 pin Male Header)

Currently do not know where on the board this is....it might have gotten removed in the final production, but not removed from the parts install.
(Bob KC5EJK)

This is a two pin jumper located next to R215 on board 2. JP208 will be added to the parts list and parts placement. If you are short a jumper and you did not install J100 then cut a pin off this part and use it for J208.
(Bob de N5BRG)

* Page 17 JP207 and JP212

These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212

This will be corrected on future PC board runs. (Bob de N5BRG)

4. It looks like R224 was dropped in the production board, but was not removed from the kit check...that probably means you have an extra one. It does not appear on page 14 of the install.

R224 was dropped. It is also shown on the schematics on page 1 of 5 along with a capacitor marked as C207. Both of these should be marked out in the schematic. They do not exist on the PC boards. The identifier C207 was used on the capacitor placed near U202 and it is connected to pins 1 and 2 of U202. This should be added to the schematic on page 3 of 5. C207 is a 22 pF capacitor. (Bob de N5BRG)

You can get de-fluxer at electronic supply houses (even Radio Shack). Don't know if it makes any difference but it looks MUCH better and makes it easier to see possible solder problems. I always do it.

I like Rons' comments here. I like to clean the flux off my boards also. I currently use a product called FLUX -GONE. It is produced by a company called Four Star Chemical located in Los Angeles, Ca. You can call them at 800-243-6264 and find the name of a distributor in your area. The key area to clean flux will be around the analog input section and around U202 and U209. These areas will be most sensitive to leakage currents resulting from flux residue. (Bob de N5BRG)

Bob, N5BRG

11. Flux facts (?)

From: creek!hammond@camel.campbell.edu (Mark L. Hammond)
Date: Sun, 1 Jan 1995 23:36:24 +0000 (GMT)
To: camel!tapr.org!dsp-93
Message-ID: <m0r0Zp3-000051C@creek.UUCP>
Rendered body type: text/plain

Hey Gang,

I tried to get flux cleaner when building my beta-kit and was told that I had to be a "real electronics shop" in order to purchase the solvent. It had to do with environmental issues. There may be some "old" cans at Radio Shack, and there was/is a plan to have "environmentally friendly" flux cleaners available soon.

Just wanted to share my experiences with y'all.

I got mine cleaned by sending my whole unit to Bob ;->

--

Mark L. Hammond [KC4EBR]

12. Re: [DSP-93:54] Flux facts (?)

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sun, 1 Jan 1995 19:47:03 -0600
To: dsp-93@tapr.org
Message-ID: <ab2d0a83000210040e61@198.3.118.167>
Rendered body type: text/plain

>Hey Gang,

>

>I tried to get flux cleaner when building my beta-kit and was told that I had to be a "real electronics shop" in order to purchase the solvent. It had to

>do with environmental issues. There may be some "old" cans at Radio Shack, and
>there was/is a plan to have "environmentally friendly" flux cleaners available
>soon.

There are two kinds of solvents. The "old" Freon-like stuff that's not
generally available and the "new" stuff that's "green". I still have a tad
of "old" but just bought a can of "new".

Radio Shack carries the "new" stuff "Rosin flux remover" 64-4330 and a
refill 64-4324. They even have Radio Shack's in the "sticks" (don't they
Mark?).

Ron W5RKN

also:
w5rkn@amsat.org

13. DSP-93 Kit Problem 1

From: Carol Byers <crlbyers@garlic.com>
Date: Sun, 1 Jan 1995 19:05:09 -0800 (PST)
To: hardware dsp-93 <dsp-93@tapr.org>
Message-ID: <Pine.A32.3.91.950101185627.11189A-100000@garlic.com>
Rendered body type: text/plain

Have completed board 1 assembly to point of testing power-supply.
Discovered the AC Adaptor (P/N AC-091A) center socket too small for
center pin on Power Jack P100. Have worked around problem by cutting
connector and connecting leads to JP100, and will find and attach
suitable connector to AC Adaptor.

Carol, W9HGI, CA Sategate

14. Re: [DSP-93:56] DSP-93 Kit Problem 1

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 2 Jan 1995 01:54:10 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501020754.BAA07818@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Carol,

1. Yes the 2.1mm plugs don't fit the 2.5mm sockets.

A plug should have been supplied. Don't use the plug supplied if you have a
1amp supply.

>From your message -- looks like we didn't catch you in time to save the 1amp
supply for destruction :-) *i.e cutting the plug off...

We mailed letters to all US builders Saturday...informing them on this
issue, to try to catch everyone.

Do you have a 1amp supply or were you lucky and got a 1.5 amp...from your
message, my guess is that it is a 1 amp.

You need to let me know which one....and also read the other mail concerning
the wall transformer issue, unless you got a late start on the group.

If you have a 1 amp supply, please let me know and send back the 1 amp
supply to

TAPR
POB 51114
Denton, Texas
76206

To recap.....

The distributor sent the shipment of wall transformers partially filled with
the new Nitendo wall transmfomers, which are 1amp instead of 1.5 amp which
is required for the kit. The distributor is suppose to let me know Tuesday
how fast they can get us replacements...probably by the end of the week, in
which case we will include them in the missing parts shipment.

Since it was their error, they are being helpfully, but we need to try to
get undamaged supplies back. If you have damaged it, send it back anyway.

In the meantime, anyone who has a lamp supply needs to tell me, so I can mark this down and get a replacement shipped and in the meantime ship the old one back the address above...even if you have cut the plug off. If you have cut the plug and attached the new one -- send it in that way and let me know so I can include a new plug with your missing parts....is this getting fun yet....it is for me :)

We will send all the transformers we have here (about 25) back and the distributor will replace them on our bill....and try to send the other (hacked ones) back...or more likely I'll take them to the local parts supplier and try to get a % of what we paid for them.

If anyone has questions, e-mail me at gjones@tenet.edu.

Also -- spread the word that if a DSP-93 kit builder has a lamp supply...PLEASE don't cut the plug, let me know so I can send another supply, and ship the lamp back to TAPR.

Cheers - Greg

According to Carol Byers:

>
> Have completed board 1 assembly to point of testing power-supply.
> Discovered the AC Adaptor (P/N AC-091A) center socket too small for
> center pin on Power Jack P100. Have worked around problem by cutting
> connector and connecting leads to JP100, and will find and attach
> suitable connector to AC Adaptor.
>
> Carol, W9HGI, CA Sategate
>

15. Power plug

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 02 Jan 1995 04:46:31 GMT
To: dsp-93@tapr.org
Message-ID: <913406.7477600@acd.acd.org>
Rendered body type: text/plain

I sent Greg this messages but I guess others may need.

If anyone is missing a Power plug after the exchange:

Radio Shack has a 5.5 mm O.D. 2.5 mm I.D.
Part number 274-1573A Coaxial Power plug
for \$1.49 for two plugs.

The length (of the silver shaft) is 10 mm where as
the included kit plug is about 14 mm.
10 mm is about the size for the socket

The Radio Shack plug might work in a pinch but it may be
a bit flimsy for 1.5 amps.

73
Bob Winingham KC5EJK

16. Reading disks

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 02 Jan 1995 04:42:45 GMT
To: dsp-93@tapr.org
Message-ID: <66387934.7477506@acd.acd.org>
Rendered body type: text/plain

I need to correct a post I left last week.

* You have a Mac and need to read the IBM disks.
I have a Macintosh and I had no problem using Apple File Exchange to read
the two computer disks into my computer. Mac PC Exchange did not work on
these low density disks so use Apple File Exchange. (Bob KC5EJK)

Ron Parsons - W5RKN sent mail that said.

>I'm surprised you had trouble mounting DOS diskettes with Apple's PC
>Exchange. I use version 2.0.2 without problems on 800k (720k DOS)
>diskettes.

That was the problem. I was using version 1.0.1 of PC Exchange
It worked as Ron said after I updated to version 2.0.2 that

came with System 7.5.

PS. There were extra blank lines in the readme.now file even on a Macintosh. I fired up the Soft PC DOS 05 program and using the DOS "TYPE" command I also could see what the CR-CR was doing. I think the MicroSoft Word wrap command might fix things up. ??

73
Bob Winingham KC5EJK

17. Jan 2, 95 Build Update

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 2 Jan 1995 16:34:09 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501022234.QAA08783@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

DSP-93 Build Suggestions
December Production

Updated: 1/2/95 (Happy New Year!)

We will try to update this message as the build happens and post it so ever so often.

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', Subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94).

January 2nd, 1995 Update Section

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Schematics Changes: On page 3 of 3 Digital:Power Supply

C118 & C119 are drawn twice: C119 once as a by-pass caps 0.1 and again as a 4.7 uF filter cap. and C118 in the power supply filter and in the by-pass cap drawing.

Change C119 from a 4.7 uF to a 0.1. Remove the extra C119. Change the extra C118 to C123. (Bob de N5BRG)

* Schematics Changes: On page 3 of 3 Digital:Power Supply

C123 is not on the diagram. It's a by-pass for U116 and is 0.1 uF. Add this to your schematic. (Bob de N5BRG)

* Schematics Changes: On page 2 of 3 Digital reset and Clock:

C110 : The value is not given just the labeled CAP. The value of C110 is 0.1 uF. Correct your schematic. (Bob de N5BRG)

* Page 19

The LED flats are small and hard to see. It might be a good double check and to mention the SHORT lead (cathode) goes in the square hole. The bend is about where the marking crimp's are on the leads. (Bob Winingham KC5EJK)

LED leads are not always cut this way. We should mention this in case they are. Be sure to look at the flat of the package to double check. (Bob de N5BRG).

* Page 10/col 2

It has been suggested:

P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together. (Jim de K4GV0)

I have soldered a number of these connectors to boards by just placing the connector flat on the PC board and filling the three holes with solder. I used a 25W soldering iron. This method works. (Bob de N5BRG)

* R224 in parts and C207 on schematics

R224 was dropped in the production board, but was not removed from the parts list. This means you have an extra resistor for this part. It was removed from page 14 of the install. It is also shown on the schematics on page 1 of 5 along with a capacitor marked as C207. Both of these should be marked out in the schematic. They do not exist on the PC boards. The identifier C207 was used on the capacitor placed near U202 and it is connected to pins 1 and 2 of U202. This should be added to the schematic on page 3 of 5. C207 is a 22 pF capacitor. (Bob de N5BRG)

* Page 17 (JP208 2 pin Male Header)

JP208 was left off the parts list and parts placement diagram. It is in the install section. This is a two pin jumper located next to R215 on board 2. If you are short a jumper and you did not install J100 then cut a pin off this part and use it for J208. (Bob de N5BRG)

* You have a Mac and need to read the IBM disks.

I have a Macintosh and I had no problem using Apple File Exchange to read the two computer disks into my computer. In addition, PC Exchange version 2.0.2 on system 7.5 works fine. (Bob KC5EJK)

* Flux removal

There has been a long discussion on the best ways to handle flux removal. Refer to the dsp-93 mail list archives for the information.

December 30th, 1994 Update Section

* Be sure to check the bottom of the bags for parts that might be stuck. The enclosure hardware was in it's own little plastic bag.

* Parts that were not shipped on Dec 18th shipping (US Kits Only)

These parts have all arrived and will begin to be shipped after Jan 1st.

*** International orders were shipped with all parts ***

Qty	Item
1	CA-S4VSC-31B 1x4 Modular PCB Interconnect
1	CA-D20VSC-63B 2x10 Modular PCB Interconnect
2	CA-D50VSC-63B 2x25 Modular PCB Interconnect
1	CA-S4VSC-83B 1x4 Modular PCB Interconnect
1	CA-D20VSC-83B 2x10 Modular PCB Interconnect
2	CA-D50VSC-83B 2x25 Modular PCB Interconnect
1	40Mhz Clock Oscillator
4	68032-20 32x8 Static RAM 20ns
1	.22 ohm res

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Inter-board connectors

When installing, make sure that the 83B parts (the longer ones) are used on board 2. Refer to the supplied sheet on the errata, which shows the connectors in 1:1 size for comparison. The shorter ones on Board 1 (bottom) will be cut off, while the longer ones are used to connect it to board 2. The difference in lengths between 63B and 83B is about a 1/4 inch. These are almost impossible to remove when installed, so DOUBLE CHECK!

(** For International builders the component ref sheet is in the build doc **)

* Page 3/2nd col (Jim de K4GV0)

R105 should be (red-red-brown-gold). It is correct on install page.

R211 should be (red-black-orange-gold). It is correct on install page.

* Page 7, Socket Install

It has been suggested:

That header J100 be installed before the U114 and U115 sockets are installed, due to the tight fit. (Jim de K4GV0)

TAPR NOTE: This will be corrected in the next run of the board.

* Page 9 (C113 and C114)

It has been suggested:

If you are putting zig-zags in the leads of the 0.1 caps to make them fit the hole spacing watch out for C113 and C114 as there are small land-holes between and the solder might wick over if the cap leads are touching the board at that spot. (Bob KC5EJK)

TAPR NOTE: The via location will be corrected in the next run of the board.

* Page 15/col 1

It has been suggested:

The power jumper that need to be added to the +5 of Pin 14 and Pin 1 of the resistor strip it would have been better if I had put the jumper in and then soldered the pins. I could have placed a small wire into the pad holes or wrapped around the pins. (Bob KC5EJK)

TAPR NOTE: This will be corrected in the next run of the board.

* Page 15/16

My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16. (Bob KC5EJK)

* Page 17 JP207 and JP212

These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212

TAPR NOTE: This will be corrected in the next board production.

* Page 18 P203AC Jack

The directions say to solder in at position P100, it should be position P203. Typo.

* Page 18/col 2 Crystal

It has been suggested:

Somehow reading the Crystal instructions misses telling people with a crystal with short leads that they need to make three wires. Two for the bottom leads and one for the can lead. Someone might mount the crystal upright. I hope when the instructions said flat it was telling me (on its side). (Bob KC5EJK)

TAPR NOTE: Mounting it on its side is the best solution, in case you want to mount a later board on top of the 2nd board (i.e. TNC-95, ethernet, etc). Some of the Xtals shipped had long leads and some didn't.

* Power Plug Install on line from transformer

I would suggest using some heat shrink when attaching the new plug to the power adapter cable. The stranded wire is large so you may want to remove a few strands to fit the center connector tab. You might also want to use

tape or hear shrink for strain relief. (Bob KC5EJK)

18. Re: [DSP-93:57] Re: DSP-93 wall transformer

From: ronalda@InterLink.NET (ronalda)
Date: Mon, 2 Jan 1995 17:45:44 -0500
To: dsp-93@tapr.org
Message-ID: <9501022245.AA10227@InterLink.NET>
Rendered body type: text/plain

I have a 1amp transformer will ship back asp.

Ronald ve2jor

19. DSP-93 Problem 2

From: Carol Byers <crlbyers@garlic.com>
Date: Mon, 2 Jan 1995 16:32:01 -0800 (PST)
To: hardware dsp-93 <dsp-93@tapr.org>
Message-ID: <Pine.A32.3.91.950102162944.12979B-100000@garlic.com>
Rendered body type: text/plain

Am short one 0.22 ohm resistor...who do I contact to get missing part ?

20. Re: [DSP-93:28] Wall Transformer Revealed

From: GerryP@interlink.net (Gerry Paquette)
Date: Mon, 02 Jan 1995 21:19:10 -0500
To: dsp-93@tapr.org
Message-ID: <9501030211.AA07436@RezoNet.NET>
Rendered body type: text/plain

Hi Greg:

Finally received my kit and I also have a 1 amp supply instead of the 1.5!!!
I just logged in on Internet and see that I have a lot of mail to catch up
with.... 73

Gerard (Gerry) Paquette, VE2AW
890 Hudson, st.
McMasterville, QC
CANADA J3G 5C3
Tel: 514-464-0049

21. Re: [DSP-93:54] Flux facts (?)

From: "Timothy W. Huster" <husterty@ucunix.san.uc.EDU>
Date: Mon, 02 Jan 1995 21:19:58 -0005
To: dsp-93@tapr.ORG
Message-ID: <01HLDVSTF05E8ZG9FX@UCBEH.SAN.UC.EDU>
Rendered body type: text/plain

> Date: Sun, 1 Jan 95 18:16 CST
> Reply-to: dsp-93@tapr.org
> From: creek!hammond@camel.campbell.edu (Mark L. Hammond)
> To: dsp-93@tapr.org
> Subject: [DSP-93:54] Flux facts (?)

Just use >90% isopropyl alcohol from a drug store and an old soft toothbrush and clean
up with some paper towels.
I've been cleaning flux off boards that way for 20 years, and never
needed any 'flux cleaner.'

> Hey Gang,
>
> I tried to get flux cleaner when building my beta-kit and was told that I had
> to be a "real electronics shop" in order to purchase the solvent. It had to
> do with environmental issues. There may be some "old" cans at Radio Shack, and
> there was/is a plan to have "environmentally friendly" flux cleaners available
> soon.
>
> Just wanted to share my experiences with y'all.

>
> I got mine cleaned by sending my whole unit to Bob ;->
>
>
> --
> Mark L. Hammond [KC4EBR]
>
>
Timothy W. Huster
husterty@ucunix.san.uc.edu
My son, Andrew (age 2) wants to type his name: a0npasd8uHIh8dhjj

22. Re: [DSP-93:62] DSP-93 Problem 2

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 2 Jan 1995 21:01:53 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501030301.VAA09149@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

The .22 res is coming with the missing parts.

See old messages.

greg

According to Carol Byers:

>
> Am short one 0.22 ohm resistor...who do I contact to get missing part ?
>

23. 2 pin header missing

From: "James W. Lynch" <k4gvo@atl1.america.net>
Date: Tue, 3 Jan 1995 05:55:09 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <199501031055.KAA06755@america.net>
Rendered body type: text/plain

I saw this mentioned, but the solution was to cut a 3 pin that I already have installed. I seem to be missing a 2 pin header. I got 8, used 3 on the first board and seem to need 6 for the second. I know my math is awful, but am I missing something? 8^) Nice kit, guys...

73,
Jim.

Jim Lynch Fayetteville, GA K4GV0
k4gvo@america.com 44.36.34.20, eventually

24. DSP-93 ROM

From: mccannm@erie.gov (Michael J. McCann)
Date: Tue, 3 Jan 95 10:43:03 EST
To: dsp-93@tapr.org
Message-ID: <9501031543.AA09168@erie.gov>
Rendered body type: text/plain

Is the source code for the monitor ROMs available ?

Mike McCann, KB2FMG

25. Progress Report

From: dmedley@dconcepts.com
Date: Sat, 31 Dec 94 09:31:33 EST
To: dsp-93@tapr.org
Message-ID: <9412310931.D2295ry@dconcepts.com>
Rendered body type: text/plain

I have completed board one as far as possible with no problems except those already noted by others. I will finish board 2 today and then eagerly await the other parts. The 1 amp power supply has been returned to TAPR.

I have noted some typos in the documentation and will make a complete list when I have finished the kit.

Trakbox users please read WA4EJR's message on the TAPR BBS.

Dave KI6QE

26. Re: [DSP-93:67] DSP-93 ROM

From: Bob Stricklin <bstrick@tenet.edu>
Date: Tue, 3 Jan 1995 12:24:52 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501031824.MAA04616@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

According to Michael J. McCann:

>

> Is the source code for the monitor ROMs available ?

This source code is not available. This is one of the few methods TAPR has to control the manufacturing rights to this product. Also it is a way of maintaining a consistent interface for users.

You should have all the tools required to develop your own programs included with the distribution disk.

If you have comments about the monitor ROMs, suggested changes or others please pass them along.

Bob Stricklin, N5BRG

27. Re: [DSP-93:66] 2 pin header missing

From: Bob Stricklin <bstrick@tenet.edu>
Date: Tue, 3 Jan 1995 12:39:06 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501031839.MAA06264@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

Sorry guys, I guess I miscounted the 2 pin jumpers when I told Greg to get 8. I will ask him to add one more to the list of parts he is sending if it is not too late.

These jumpers are only included in case you want to do some experimenting or develop new applications. None of the current distribution code requires the use of a jumper. You may need the jumper on the serial interface port. Sorry do not have a set of docs in front of me so I can not give you the exact JP number.

I know you want to get everything in place so you can clean it and seal it up. If you want you might find something else with .025 post, like an old scrap board, cut off two post and use a shorting bar to hold them while soldering them in the PCB. Just an idea if you want to finish up before you get a TAPR provided jumper.

Bob Stricklin, N5BRG

28. Re: [DSP-93:66] 2 pin header missing

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 3 Jan 1995 13:31:04 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501031931.NAA15174@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Bob felt it was necessary at the last minute to populate all the header connectors. Since I had overlooked the new 2 pin header that was on the production board, but not on the beta-boards I missed counted, and thus we have 8 instead of 9.

If you are missing one - it is not much of a problem, because most of them will never be used for normal operations.

If you need on James, let me know and I will include one in your box.

Cheers - Greg

According to James W. Lynch:

>

> I saw this mentioned, but the solution was to cut a 3 pin that I already
> have installed. I seem to be missing a 2 pin header. I got 8, used
> 3 on the first board and seem to need 6 for the second. I know my math
> is awful, but am I missing something? 8^) Nice kit, guys...

>

> 73,

> Jim.

>

> -----
> Jim Lynch Fayetteville, GA K4GVO
> k4gvo@america.com 44.36.34.20, eventually

>

29. Re: [DSP-93:68] Progress Report

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 3 Jan 1995 13:43:19 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501031943.NAA17118@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Great work Dave!

Looking forward to your comments.

Greg

According to dmedley@dconcepts.com:

>

>

> I have completed board one as far as possible with no problems except
> those already noted by others. I will finish board 2 today and then
> eagerly await the other parts. The 1 amp power supply has been returned
> to TAPR.
> I have noted some typos in the documentation and will make a complete
> list when I have finished the kit.
> Trakbox users please read WA4EJR's message on the TAPR BBS.
> Dave KI6QE
>

30. TI Data Books and Spec Sheets

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 3 Jan 1995 21:43:13 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501040343.VAA11808@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi fellow DSP-93'ers

I had a recent e-mail asking about how to locate and attain the TI data books for the various TI chips used stuff on the DSP-93.

Maybe everyone can state their thoughts on the best ways of getting this stuff free or almost free.

Cheers - Greg

31. Re: [DSP-93:73] TI Data Books and Spec Sheets

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 3 Jan 1995 22:27:35 -0600
To: dsp-93@tapr.org
Message-ID: <ab2fd26a0302100450f1@[198.3.118.163]>
Rendered body type: text/plain

>Hi fellow DSP-93'ers

>

>I had a recent e-mail asking about how to locate and attain the TI data
>books for the various TI chips used stuff on the DSP-93.

>

>Maybe everyone can state their thoughts on the best ways of getting this
>stuff free or almost free.

>

>Cheers - Greg

Just find out who your local TI distributor is and call them. The local distributor gave me free reign of their literature room (all free).

TMS320C2x User's Guide By Texas Instruments Document # SPRU014C

Linear Circuits; Data Conversion, DSP Analog Interface, and Video Interface; Data Book Volume 2 also by Texas Instruments Document # SLYD004A.

I also picked up:

Digital Signal Processing Applications with the TMS320 Family;
Theory, Algorithms, and Implementations
Volume 1 Document # SPRA012A
Volume 2 Document # SPRA016
Volume 3 Document # SPRA017

Ron W5RKN

also:
w5rkn@amsat.org

32. Re: [DSP-93:71] Re: 2 pin header missing

From: "James W. Lynch" <k4gvo@at11.america.net>
Date: Wed, 4 Jan 1995 05:06:58 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <199501041006.KAA17822@america.net>
Rendered body type: text/plain

>
> Bob felt it was necessary at the last minute to populate all the header
> connectors. Since I had overlooked the new 2 pin header that was on the
> production board, but not on the beta-boards I missed counted, and thus we
> have 8 instead of 9.
>
> If you are missing one - it is not much of a problem, becuae
> most of them will never be used for normal operations.
>
> If you need on James, let me know and I will include on ein your box.
Naw, just tell me which one to leave off. The one least likely to be used.
>
>
> Cheers - Greg
>

73,
Jim.

33. Re: [DSP-93:73] TI Data Books and Spec Sheets

From: "Paul Beckmann" <paul@eye.psych.umn.edu>
Date: Wed, 4 Jan 95 08:33:57 CST
To: dsp-93@tapr.org
Message-ID: <9501041433.AA17570@eye.psych.umn.edu>
Rendered body type: text/plain

Hi, folks, and Happy New Year!

I had mixed response from TI on the data books/sheets. My first request went through a PAY telephone call from here but the response was a pair of hefty data books free in 3-5 weeks. These covered the 320 and application examples. Getting additional info on the A10 chip was much more frustrating. I finally was able to get a local friend to photocopy it for me from a databook he had. I still do not have application information on the 16550.

Can TAPR somehow come up with a databook/sheet package to cover the programmable IC's in the system and sell it to interested users? Could an intermediate set of documentation be put in the include files that would cover everthing (IC programming and address decode) other than the 320? Then, with just the 320 databook, people could get a really good start. Could TAPR/AMSAT obtain copyright for some of the "block diagrams" of the chips to include in a doc package?

Just some ideas....sorry if I'm rambling....brain still defrosting....
minus 42 F windchill here now with minus 14 still-air temp....

--Paul Beckmann
WA0RSE

34. Power Plugs

From: Bob Stricklin <bstrick@tenet.edu>
Date: Wed, 4 Jan 1995 10:40:08 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501041640.KAA19448@Gayle-Gaston.tenet.edu>
Rendered body type: text/plain

> According to Bent Bagger:
>
> There was, however, only one power jack plug, but I guess that the
> other one will be hanging from the end of the cable from the wall
> transformer, once I get around to getting one.
>

Your DSP-93 only needs one power plug. The two boards each have power jacks for testing the boards before they are assembled. After assembly the AC is coupled between boards using the four pin connector.

I am going to have to get a set of DOCs for my office so I can reference the correct part numbers when I reply to email from here.

Bob Stricklin, N5BRG

35. Texas Instruments Phone Numbers

From: mccannm@erie.gov (Michael J. McCann)
Date: Thu, 5 Jan 95 10:28:50 EST
To: dsp-93@tapr.org
Message-ID: <9501051528.AA11998@erie.gov>
Rendered body type: text/plain

Hi Guys

I found these phone numbers on the bottom of a TMS320 applicaion note.

TI Literature Center (800) 477-8924
TMS320 Hotline (713) 274-2320
TMS320 BBS (713) 274-2323

There is also an E-Mail address: 4389750@mcimail.com

Mike McCann, KB2FMG

36. Report 1 (fwd)

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 5 Jan 1995 17:49:08 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501052349.RAA19359@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to dmedley@dconcepts.com:
>From dmedley@dconcepts.com Thu Jan 5 03:35:53 1995
From: dmedley@dconcepts.com
Message-Id: <9501020210.D5350JK@dconcepts.com>
X-Mailer: UUPlus Mail 1.50
To: wd5ivd@tapr.org
Subject: Report 1
Organization: Digital Concepts BBS - TELNETable!
Date: Mon, 02 Jan 95 02:10:28 EST

Here is a summary of my progress with the DSP assembly in the hope it may be of some help to others.

- Board 1. This has been completed as far as the top of page 12. This includes initial testing of the power supply. (I found in my junk box a small wall transformer rated at 9v AC at 350ma. I figured this would be enough to test the power supplies without any ICs installed). The power supply voltage when first tested exhibited some major instability and it was found that by wiggling the 7805 the voltage jumped from 5 to 12 volts DC. Resoldering the 7805 connections quickly solved this problem. The pads for this are very small and one needs to be sure the solder flows down the legs of the 7805 well into the plated through hole. The 5 volts at all the 28 pin ics checks OK. The actual voltage as measured was 4.9 volt but then my VOM has not been to the NBS recently!!
- Board 2. I had some "adventures" with this board and have not yet been brave enough to apply power to it. I am going to spend time tomorrow re checking everything. When I had finished as far as I could I found I had the following parts left over:
- 1 10uf capacitor
supplied with the kit)
 - 2 470 ohm resistors
These are R220 and R223. The instructions are unclear as to whether these should be installed or not. As these seem to be something to do with ICOM radios and I have a Yaesu I left them out.
 - 1 32k resistor. I have apparently missed this along the way and will find a home for it tomorrow.

I had problems identifying some of the small capacitors. I noted somebody else had the same problems with for example 22J instead of 27 and 47J instead of 47. The very inconsistency of all this makes one wonder if the capacities are really correct. I have no way of measuring caps as small as these. Inconsistencies between the schematics and the instructions could also cause confusion in the future. In my case I had already seen Bob's corrections and had amended my documents before hand.

Installation of headers is always a pain and I have gone through the burnt finger routine several times in the past. The method I have used is to spread the outside (short) pins slightly with a pair of pliers until the unit fits snugly in the holes even if the board is inverted. Then you can make a good solder job without burning your finger.

Now we come to the crystal. Mine had short leads (of course). I must have read the instructions at the top of page 18 a dozen times and each time with a different result. Here is how I think the instruction should read:

CRYSTAL

NOTE: It is recommended that the crystal lie flat against the circuit board as opposed to standing up. Your crystal may not have long enough leads to achieve this in which case proceed as follows:

1. From the leads you have clipped off from already installed components select three pieces about one inch long.
2. Push one piece through the hole near R226 and solder it from the back. You will now have a long piece on the front of the board. Bend this against the board and towards R226. Lie the crystal package on this wire with the short leads approximately over the connection holes on the PCB.
3. Bend the wire carefully over the top of the crystal package and quickly solder it to the can near the top. BE VERY CAREFUL NOT TO USE TOO MUCH HEAT.
4. Now push the other two wires through the crystal connection holes and solder them from the back. Where they butt up against the leads from the crystal package solder them quickly, again avoiding the use of too much heat.
5. The crystal should now be lying snugly and firmly against the PCB.

(I don't think bending the leads from the package is a good idea and not necessary if the above procedure is followed).

The DB9SPC connector. What in the world is a "tang" ? I thought this was some kind of beverage drunk by astronauts. In any case the connector supplied had mounting holes and I bolted mine to

I think the tang thing refers to the mini-DIN connectors. I would call them mounting tabs which to me would be more understandable.

The LEDs. The ones supplied had one lead shorter than the other but no flats on the flanges. I wired the short leads to the square pads hoping for the best.

Thats it for today. I will probably get brave enough to fire up the power supply on board 2 tonmorrow!!!

73 de Dave

37. DSP-93 ROM

From: mccannm@erie.gov (Michael J. McCann)
Date: Fri, 6 Jan 95 11:11:24 EST
To: dsp-93@tapr.org
Message-ID: <9501061611.AA13413@erie.gov>

Rendered body type: text/plain

> According to Michael J. McCann:
> >
> > Is the source code for the monitor ROMs available ?
>
> This source code is not available. This is one of the few methods TAPR has
> to control the manufacturing rights to this product. Also it is a way of
> maintaining a consistent interface for users.
>
> You should have all the tools required to develop your own programs included
> with the distribution disk.
>
> If you have comments about the monitor ROMs, suggested changes or others
> please pass them along.
>
> Bob Stricklin, N5BRG
>
>
Hi Bob

I would like to see software debugging functions added to the monitor. The functions that are most important to me would be:

1. Program breakpoints. CPU executes an instruction at the breakpoint location and returns control to the monitor and prints the CPU registers and the PC value, similar to the Microsoft DOS debugger's G command.
2. Single instruction tracing, like the T command in the Microsoft DOS debugger.

Mike McCann, KB2FMG

38. Re: [DSP-93:58] Power plug

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 7 Jan 1995 02:38:52 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501070838.CAA04019@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to Bob Winingham:
>
> Radio Shack has a 5.5 mm O.D. 2.5 mm I.D.
> Part number 274-1573A Coaxial Power plug
> for \$1.49 for two plugs.
>
> The length (of the silver shaft) is 10 mm where as
> the included kit plug is about 14 mm.
> 10 mm is about the size for the socket
>
> The Radio Shack plug might work in a pinch but it may be
> a bit flimsy for 1.5 amps.

Bob, why do you say this plug might be flimsy for 1.5amps ?

greg

39. DSP-93 for non-modem applications

From: Matthew Francey <mdf@io.org>
Date: Sat, 7 Jan 1995 04:23:42 -0500
To: dsp-93@tapr.org
Message-ID: <199501070923.EAA07576@grin.io.org>
Rendered body type: text/plain

Over the last few months, I have been using a Motorola 68HC11 E2 to act like doppler radio direction finding system -- the microcontroller does all the antenna sequencing, audio filtering, phase computations, some simplistic bearing filtering and eventual display.

The system works, quite well in fact. However, a number of interesting signal processing methods aren't possible; I've just about run out of memory (2k EEPROM, 256 bytes RAM) and CPU cycles (2MHz). So I am looking for a nice DSP unit to take over ... for microDoppler version 2.0 [[version 1.0 will be ready for public consumption in a week or two]].

In addition to the audio processing from the receiver, the DSP will have to control the antenna array -- or be notified about changes in an externally controlled array. Does the DSP-93 have parallel I/O lines (at least 8) and/or a related interrupt system? Trivially modifiable to do such?

Can the development tools -- assembler, etc -- be compiled for Linux?
MSDOS/Windows development is, I'm afraid, out of the question.

Has anyone had any problems with a DSP-93 re: computer generated RFI?

Thanks for any advice/help.

--

Matthew Francey | "Nobody with a good computer needs to be justified."
mdf@vigard.mef.org | GPS(NAD27): N43o34.210' W079o34.563' +0093m

40. [DSP-93:82] DSP-93 for non-modem applications (fwd)

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 7 Jan 1995 03:59:07 -0600 (CST)
To: dsp@tapr.org (TAPR/AMSAT DSP)
Cc: dsp-93@tapr.org (DSP-93 Build), mdf@io.org
Message-ID: <199501070959.DAA04968@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

This was posted to dsp-93, but is really for the dsp software discussion mail list.

DSP-93@TAPR.ORG is for building related topics.
Although the last sentence is related to dsp-93 construction :-)

Please discuss the software aspect of the message on the dsp@tapr.org mail list. The RFI can be discussed on the DSP-93 :)

It might not seem to be important now to make a distinction between the two groups, but as more people build dsp-93s, then we will want to try to contain the build related messages to the dsp-93 group and software discussion to dsp@tapr.org

Better to start early.

Cheers - Greg, WD5IVD

According to Matthew Francey:
From: Matthew Francey <mdf@io.org>
To: dsp-93@tapr.org
Subject: [DSP-93:82] DSP-93 for non-modem applications
X-Listprocessor-Version: 6.0c -- ListProcessor by Anastasios Kotsikonas
X-Comment: Tucson Amateur Packet Radio DSP-93 Kit SIG

Over the last few months, I have been using a Motorola 68HC11 E2 to act like doppler radio direction finding system -- the microcontroller does all the antenna sequencing, audio filtering, phase computations, some simplistic bearing filtering and eventual display.

The system works, quite well in fact. However, a number of interesting signal processing methods aren't possible; I've just about run out of memory (2k EEPROM, 256 bytes RAM) and CPU cycles (2MHz). So I am looking for a nice DSP unit to take over ... for microDoppler version 2.0 [[version 1.0 will be ready for public consumption in a week or two]].

In addition to the audio processing from the receiver, the DSP will have to control the antenna array -- or be notified about changes in an externally controlled array. Does the DSP-93 have parallel I/O lines (at least 8) and/or a related interrupt system? Trivially modifiable to do such?

Can the development tools -- assembler, etc -- be compiled for Linux?
MSDOS/Windows development is, I'm afraid, out of the question.

Has anyone had any problems with a DSP-93 re: computer generated RFI?

Thanks for any advice/help.

--

Matthew Francey | "Nobody with a good computer needs to be justified."
mdf@vigard.mef.org | GPS(NAD27): N43o34.210' W079o34.563' +0093m

41. Re: [DSP-93:80] DSP-93 ROM

From: Bob Stricklin <bstrick@tenet.edu>
Date: Sat, 7 Jan 1995 09:00:28 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501071500.JAA20569@Joyce-Perkins.tenet.edu>

Rendered body type: text/plain

According to Michael J. McCann:

> functions that are most important to me would be:

>

> 1. Program breakpoints. CPU executes an instruction at the breakpoint location

> and returns control to the monitor and prints the CPU registers and the PC

> value, similar to the Microsoft DOS debugger's G command.

>

Review the information in a file called DEBUG.INC. DEBUG is included in the monitor and you will get the DEBUG output by inserting a CALL DEBUG in your code if you include MONITOR.INC (to use the one in the monitor) or DEBUG.INC. Tom, N5EG wrote the DEBUG routine and I have found it helpful.

> 2. Single instruction tracing, like the T command in the Microsoft DOS debugger. This will be more difficult to add. Having a CALL DEBUG after every instruction in your code will do it. I can not see an easy way to get this into the monitor. If you can write some code that does a trace we can add it to the monitor (assuming its not too long).

It would be possible to have a shell which you load into the DSP-93 and then load your own test program. This would be a very difficult project though.

Bob Stricklin, N5BRG

42. AIO C216 and C222

From: vince@rfsi.com

Date: Sat, 7 Jan 1995 22:27:06 GMT

To: dsp-93@tapr.org

Message-ID: <9501072221.D37315w@rfsi.com>

Rendered body type: text/plain

Date: Sat, 07 Jan 95 22:21:54 EST

Hello all,

I'm on page 16 of 33, the AIO polarized capacitors. C216 and C222 (10 ufd,16v electrolytic) as supplied have 0.1" radial leads. The holes are spaced 0.2".

1)How have y'all been doing this? I was going to just hang them in the air kinda, but then I thought I'd check with those of you that are a bit ahead of me...

2)I am assuming that the positive lead goes to the square pad, since I do not see any + signs...

This is sure going together very smoothly. The DSP board went very well. I did not encounter any issues beyond those already reported by the group.

Please let me know if I am OK on the C216, C222 issue.

TNX, 73,

Vince Risalvato KD7AI kd7ai@amsat.org or vince@rfsi.com
Hudson, FL

43. Re: [DSP-93:85] AIO C216 and C222

From: Greg Jones <gjones@tenet.edu>

Date: Sat, 7 Jan 1995 23:42:51 -0600 (CST)

To: dsp-93@tapr.org

Message-ID: <199501080542.XAA02473@Alice-Thurman.tenet.edu>

Rendered body type: text/plain

According to vince@rfsi.com:

>

> Date: Sat, 07 Jan 95 22:21:54 EST

>

>

> Hello all,

>

> I'm on page 16 of 33, the AIO polarized capacitors.

> C216 and C222 (10 ufd,16v electrolytic) as supplied

> have 0.1" radial leads. The holes are spaced 0.2".

>

> 1)How have y'all been doing this? I was going to just

> hang them in the air kinda, but then I thought I'd check

> with those of you that are a bit ahead of me...

Spreading the legs a little and placing them should work.

> 2) I am assuming that the positive lead goes to the square
> pad, since I do not see any + signs...

Refer to the p[arts placement on page 6. The + are marked on that for all caps that require alignment. Sometime the board does not allow room for the silkscreen.

> This is sure going together very smoothly. The DSP board went
> very well. I did not encounter any issues beyond those already
> reported by the group.

Thanks.... from the DSP-93 development group.

Greg

44. DSP-93 Build Update Jan 8th

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 8 Jan 1995 00:10:10 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501080610.AAA04431@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

DSP-93 Build Suggestions
December Production

Updated: 1/8/95

We will try to update this message as the build happens and post it so ever so often.

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', Subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94).

January 8th, 1995 Update Section

* Additional Parts Update

The additional parts required for all US builders will be shipped starting Monday by UPS ground.

* Wall Transformer Update

Now, for the bad news. Both distributors have informed TAPR that they will not have units to ship to the TAPR office until January 24th. We have several folks looking for alternate suppliers at the CES this weekend, but we are not placing our hopes on locating someone. If anyone might have an alternate source for 1.5amp 9v wall transformers that are UL approved, please call me at (817) 383-2005 (Greg). We have received a great response from everyone and many of the transformers have arrived back at the office. Thanks so much. We will continue to work on this issue and apologize for the additional delay. One of those learning experiences.

* Page 33 Note

WARNING: It is important to triple check the information located on page 33 of 33 of the assembly manual. If your unit has problems, there is a chance that it might key unnecessarily in some states and thus do damages to pre-amps or other equipment. While this is a very rare event, we felt it necessary to make sure everyone double checks the straps required to interface to their radios. While testing, make sure you have no critical items connected that might be hurt by the transmitter keying (i.e. gasfet preamps) A method to failsafe this 100%, even when U213 (?) might fail, is under study. More later.

January 2nd, 1995 Update Section

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Schematics Changes: On page 3 of 3 Digital:Power Supply

C118 & C119 are drawn twice: C119 once as a by-pass caps 0.1 and again as a 4.7 uF filter cap. and C118 in the power supply filter and in the by-pass cap drawing.

Change C119 from a 4.7 uF to a 0.1. Remove the extra C119. Change the extra C118 to C123. (Bob de N5BRG)

* Schematics Changes: On page 3 of 3 Digital:Power Supply

C123 is not on the diagram. It's a by-pass for U116 and is 0.1 uF. Add this to your schematic. (Bob de N5BRG)

* Schematics Changes: On page 2 of 3 Digital reset and Clock:

C110 : The value is not given just the labeled CAP. The value of C110 is 0.1 uF. Correct your schematic. (Bob de N5BRG)

* Page 19

The LED flats are small and hard to see. It might be a good double check and to mention the SHORT lead (cathode) goes in the square hole. The bend is about where the marking crimp's are on the leads. (Bob Winingham KC5EJK)

LED leads are not always cut this way. We should mention this in case they are. Be sure to look at the flat of the package to double check. (Bob de N5BRG).

* Page 10/col 2

It has been suggested:

P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together. (Jim de K4GV0)

I have soldered a number of these connectors to boards by just placing the connector flat on the PC board and filling the three holes with solder. I used a 25W soldering iron. This method works. (Bob de N5BRG)

* R224 in parts and C207 on schematics

R224 was dropped in the production board, but was not removed from the parts list. This means you have an extra resistor for this part. It was removed from page 14 of the install. It is also shown on the schematics on page 1 of 5 along with a capacitor marked as C207. Both of these should be marked out in the schematic. They do not exist on the PC boards. The identifier C207 was used on the capacitor placed near U202 and it is connected to pins 1 and 2 of U202. This should be added to the schematic on page 3 of 5. C207 is a 22 pF capacitor. (Bob de N5BRG)

* Page 17 (JP208 2 pin Male Header)

JP208 was left off the parts list and parts placement diagram. It is in the install section. This is a two pin jumper located next to R215 on board 2. If you are short a jumper and you did not install J100 then cut a pin off this part and use it for J208. (Bob de N5BRG)

* You have a Mac and need to read the IBM disks.

I have a Macintosh and I had no problem using Apple File Exchange to read

the two computer disks into my computer. In addition, PC Exchange version 2.0.2 on system 7.5 works fine. (Bob KC5EJK)

I used DOSMounter to read the files onto my Mac. (Greg, WD5IVD)

* Flux removal

There has been a long discussion on the best ways to handle flux removal. Refer to the dsp-93 mail list archives for the information.

December 30th, 1994 Update Section

* Be sure to check the bottom of the bags for parts that might be stuck. The enclosure hardware was in it's own little plastic bag.

* Parts that were not shipped on Dec 18th shipping (US Kits Only)
These parts have all arrived and will begin to be shipped after Jan 1st.
*** International orders were shipped with all parts ***

Qty	Item
1	CA-S4VSC-31B 1x4 Modular PCB Interconnect
1	CA-D20VSC-63B 2x10 Modular PCB Interconnect
2	CA-D50VSC-63B 2x25 Modular PCB Interconnect
1	CA-S4VSC-83B 1x4 Modular PCB Interconnect
1	CA-D20VSC-83B 2x10 Modular PCB Interconnect
2	CA-D50VSC-83B 2x25 Modular PCB Interconnect
1	40Mhz Clock Oscillator
4	68032-20 32x8 Static RAM 20ns
1	.22 ohm res

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Inter-board connectors

When installing, make sure that the 83B parts (the longer ones) are used on board 2. Refer to the supplied sheet on the errata, which shows the connectors in 1:1 size for comparison. The shorter ones on Board 1 (bottom) will bet cut off, while the longer ones are used to connect it to board 2. The difference in lengths between 63B and 83B is about a 1/4 inch. These are almost impossible to remove when installed, so DOUBLE CHECK!
(** For International builders the component ref sheet is in the build doc **)

* Page 3/2nd col (Jim de K4GV0)

R105 should be (red-red-brown-gold). It is correct on install page.

R211 should be (red-black-orange-gold). It is correct on install page.

* Page 7, Socket Install

It has been suggested:

That header J100 be installed before the U114 and U115 sockets are installed, due to the tight fit. (Jim de K4GV0)

TAPR NOTE: This will be corrected in the next run of the board.

* Page 9 (C113 and C114)

It has been suggested:

If you are putting zig-zags in the leads of the 0.1 caps to make them fit the hole spacing watch out for C113 and C114 as there are small land-holes between and the solder might wick over if the cap leads are touching the board at that spot. (Bob KC5EJK)

TAPR NOTE: The via location will be corrected in the next run of the board.

* Page 15/col 1

It has been suggested:

The power jumper that need to be added to the +5 of Pin 14 and Pin 1 of the resistor strip it would have been better if I had put the jumper in and then soldered the pins. I could have placed a small wire into the pad holes or wrapped around the pins. (Bob KC5EJK)
TAPR NOTE: This will be corrected in the next run of the board.

* Page 15/16

My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16. (Bob KC5EJK)

* Page 17 JP207 and JP212

These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212

TAPR NOTE: This will be corrected in the next board production.

* Page 18 P203AC Jack

The directions say to solder in at position P100, it should be position P203. Typo.

* Page 18/col 2 Crystal

It has been suggested:

Somehow reading the Crystal instructions misses telling people with a crystal with short leads that they need to make three wires. Two for the bottom leads and one for the can lead. Someone might mount the crystal upright. I hope when the instructions said flat it was telling me (on its side). (Bob KC5EJK)

TAPR NOTE: Mounting it on its side is the best solution, in case you want to mount a later board on top of the 2nd board (i.e. TNC-95, ethernet, etc). Some of the Xtals shipped had long leads and some didn't.

* Power Plug Install on line from transformer

I would suggest using some heat shrink when attaching the new plug to the power adapter cable. The stranded wire is large so you may want to remove a few strands to fit the center connector tab. You might also want to use tape or heat shrink for strain relief. (Bob KC5EJK)

45. Wall Transformer

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 09 Jan 1995 01:58:56 GMT
To: dsp-93@tapr.org
Message-ID: <2532241309.17198964@acd.org>
Rendered body type: text/plain

I posted last week

>Radio Shack has a 5.5 mm O.D. 2.5 mm I.D.
>Part number 274-1573A Coaxial Power plug
>for \$1.49 for two plugs.
> but it may be a bit flimsy for 1.5 amps.

It way work fine at 1.5 amps. I have not tried it.
The Plug just feels cheap and flimsy.

The inside solder tabs are a bit smaller than the TAPR supplied plug. The Radio Shack plug doesn't have the white insulating material between the solder tabs and the tube is easily squeezed.

----- Wall Transformer Power Module -----

I did see a 9 VAC 1.3 amp. power module at Radio Shack
The unit was advertised for use with a game computers.

Bob KC5EJK [EM12ot]

46. It works!

From: Ian Ashley <iana@kcbbs.gen.nz>
Date: Wed, 11 Jan 1995 00:44:18 +1300 (NZDT)
To: dsp-93@tapr.org
Cc: Jeff Garrett <jeff@kcbbs.gen.nz>
Message-ID: <Pine.3.05.1.9501110018.B4345-b100000@kcbbs>
Rendered body type: text/plain

Hi Greg

I received the DSP-93 kit on Sunday and completed the kit today.
I had 1 spare 74S03, 1 100k and 20k resistor.
All the power checks were OK, but at the final test (page 23 of 33), LED 1 refused to come on. Found that the reset line on pin 7 of IC116 remained low no matter whether the reset button was pushed or not.
As a temporary fix until I obtain a new MAX692, I wired a 1K resistor from pin 2 to pin 7 (and removed the IC). A touch on the pin 7 end of the 1K with an earth wire has enabled the reset and the DSP-93 works 100%. All the tests via the monitor ROM completed OK.

Thanks to all concerned for the excellent instructions and standard of documentation.

I have some comments on the instructions:

1. Typo page 15 col 1 para 6 should be R217 not R127 and perhaps at end of line add U205 pin 14.
2. Page 15 col2 ... suggest that C214 be included in group below or maybe highlight it some way. I was caught out and placed a 0.1 instead of 1.0UF cap in position C214.
3. Page 18 col 2 re P201 ... the DB9 supplied was a bolt on variety, and MUST be bolted to the PC board.
4. Page 20 col 2 re speaker wire... there is not a square PCB pad as mentioned in 2nd from bottom paragraph.
5. Page 21 RESET button... should mention that it is soldered onto board 1. There is also a reset position in the same area on Board 2.

The updates on the BBS have been very useful, and clarified some of our queries. Thanks to all.

Now the hard part... radio interfacing and software...

Cheers to all, Ian Ashley, ZL1A0X.

47. It also works (see 89)

From: Jeff Garrett <jeff@kcbbs.gen.nz>
Date: Wed, 11 Jan 1995 01:59:05 +1300 (NZDT)
To: dsp-93@tapr.org
Message-ID: <Pine.3.05.1.9501110105.A4747-a100000@kcbbs>
Rendered body type: text/plain

Hi All

I have also just finished my DSP-93 kit and having the same problems as Ian ZL1A0X..... I have had to remove U116 and use a pull up resistor. Is this a common problem or have we downunder done something wrong. I also agree with the comments Ian made with the addition of maybe installing the interboard connectors JP201 JP202 JP203 and JP205 a little later in the build. Extra care is needed when handling the board after they have been installed.
Keep up the good work and I am impressed with the quality of the build documentation.

73

Jeff ZL1BIV
jeff@kcbbs.gen.nz

48. Re: [DSP-93:89] It works!

From: Mark L. Hammond <hammond@camel.campbell.edu>
Date: Tue, 10 Jan 1995 09:12:39 -0500
To: dsp-93@tapr.org
Message-ID: <9501101407.AA05231@camel.campbell.edu>
Rendered body type: text/plain

Congrats on getting your DSP-93s running, guys! Glad to have you join "the group"!

Mark, KC4EBR

DSP-93 beta-tester

49. Build Update 1/10/94

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 10 Jan 1995 11:51:26 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501101751.LAA23742@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

DSP-93 Build Suggestions
December Production

Updated: 1/10/95

We will try to update this message as the build happens and post it so ever so often.

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', Subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94).

January 10th, 1995 Update Section

* Good News! I found a source for 1.5amp transformers (Yeah!) They should arrive at the office on Monday or Tuesday. Before I leave to go back to Austin and return to being a full-time student once again, I'll set Dorothy up ready to ship units to everyone that has requested a replacement. -- Greg

* Typo page 15 col 1 para 6. Should be R217 not R127 and perhaps at end of line add U205 pin 14. (Ian, ZL1A0X)

* Page 15 col2 ... suggest that C214 be included in group below or maybe highlight it some way. I was caught out and placed a 0.1 instead of 1.0UF cap in position C214. (Ian, ZL1A0X)

* Page 20 col 2 re speaker wire. There is not a square PCB pad as mentioned in 2nd from bottom paragraph. (Ian, ZL1A0X)
NOTE: The square pad was suppose to be the hole next to the edge of the board.

* Page 21 RESET button. Should mention that it is soldered onto board 1. There is also a reset position in the same area on Board 2. (Ian, ZL1A0X)

* When installing the interboard connectors JP201, JP202, JP203, and JP205 you need to be careful. Extra care is needed when handling the boards after they have been installed. (Jeff, ZL1BIV)

P.S. Congrats to Jeff, ZL1BIV and Ian, ZL1A0X for the first units finished and working.

January 8th, 1995 Update Section

* Additional Parts Update
The additional parts required for all US builders will be shipped starting Monday by UPS ground.

* Wall Transformer Update
Now, for the bad news. Both distributors have informed TAPR that they will not have units to ship to the TAPR office until January 24th. We have several folks looking for alternate suppliers at the CES this weekend, but we are not placing our hopes on locating someone. If anyone might have an alternate source for 1.5amp 9v wall transformers that are UL approved, please call me at (817) 383-2005 (Greg). We have received a great response from everyone and many of the transformers have arrived back at the office. Thanks so much. We will continue to work on this issue and apologize for the additional delay. One of those learning experiences.

* Page 33 Note

WARNING: It is important to triple check the information located on page 33 of 33 of the assembly manual. If your unit has problems, there is a chance that it might key unnecessarily in some states and thus do damages to pre-amps or other equipment. While this is a very rare event, we felt it necessary to make sure everyone double checks the straps required to interface to their radios. While testing, make sure you have no critical items connected that might be hurt by the transmitter keying (i.e. gasfet preamps) A method to failsafe this 100%, even when U213 (?) might fail, is under study. More later.

January 2nd, 1995 Update Section

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Schematics Changes: On page 3 of 3 Digital:Power Supply

C118 & C119 are drawn twice: C119 once as a by-pass caps 0.1 and again as a 4.7 uF filter cap. and C118 in the power supply filter and in the by-pass cap drawing.

Change C119 from a 4.7 uF to a 0.1. Remove the extra C119. Change the extra C118 to C123. (Bob de N5BRG)

* Schematics Changes: On page 3 of 3 Digital:Power Supply

C123 is not on the diagram. It's a by-pass for U116 and is 0.1 uF. Add this to your schematic. (Bob de N5BRG)

* Schematics Changes: On page 2 of 3 Digital reset and Clock:

C110 : The value is not given just the labeled CAP. The value of C110 is 0.1 uF. Correct your schematic. (Bob de N5BRG)

* Page 19

The LED flats are small and hard to see. It might be a good double check and to mention the SHORT lead (cathode) goes in the square hole. The bend is about where the marking crimp's are on the leads. (Bob Winingham KC5EJK)

LED leads are not always cut this way. We should mention this in case they are. Be sure to look at the flat of the package to double check. (Bob de N5BRG).

* Page 10/col 2

It has been suggested:

P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together. (Jim de K4GV0)

I have soldered a number of these connectors to boards by just placing the connector flat on the PC board and filling the three holes with solder. I used a 25W soldering iron. This method works. (Bob de N5BRG)

* R224 in parts and C207 on schematics

R224 was dropped in the production board, but was not removed from the parts list. This means you have an extra resistor for this part. It was removed from page 14 of the install. It is also shown on the schematics on page 1 of 5 along with a capacitor marked as C207. Both of these should be marked

out in the schematic. They do not exist on the PC boards. The identifier C207 was used on the capacitor placed near U202 and it is connected to pins 1 and 2 of U202. This should be added to the schematic on page 3 of 5. C207 is a 22 pF capacitor. (Bob de N5BRG)

* Page 17 (JP208 2 pin Male Header)

JP208 was left off the parts list and parts placement diagram. It is in the install section. This is a two pin jumper located next to R215 on board 2. If you are short a jumper and you did not install J100 then cut a pin off this part and use it for J208. (Bob de N5BRG)

* You have a Mac and need to read the IBM disks.

I have a Macintosh and I had no problem using Apple File Exchange to read the two computer disks into my computer. In addition, PC Exchange version 2.0.2 on system 7.5 works fine. (Bob KC5EJK)

I used DOSMouter to read the files onto my Mac. (Greg, WD5IVD)

* Flux removal

There has been a long discussion on the best ways to handle flux removal. Refer to the dsp-93 mail list archives for the information.

December 30th, 1994 Update Section

* Be sure to check the bottom of the bags for parts that might be stuck. The enclosure hardware was in it's own little plastic bag.

* Parts that were not shipped on Dec 18th shipping (US Kits Only)

These parts have all arrived and will begin to be shipped after Jan 1st.

*** International orders were shipped with all parts ***

Qty	Item
1	CA-S4VSC-31B 1x4 Modular PCB Interconnect
1	CA-D20VSC-63B 2x10 Modular PCB Interconnect
2	CA-D50VSC-63B 2x25 Modular PCB Interconnect
1	CA-S4VSC-83B 1x4 Modular PCB Interconnect
1	CA-D20VSC-83B 2x10 Modular PCB Interconnect
2	CA-D50VSC-83B 2x25 Modular PCB Interconnect
1	40Mhz Clock Oscillator
4	68032-20 32x8 Static RAM 20ns
1	.22 ohm res

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Inter-board connectors

When installing, make sure that the 83B parts (the longer ones) are used on board 2. Refer to the supplied sheet on the errata, which shows the connectors in 1:1 size for comparison. The shorter ones on Board 1 (bottom) will bet cut off, while the longer ones are used to connect it to board 2. The difference in lengths between 63B and 83B is about a 1/4 inch. These are almost impossible to remove when installed, so DOUBLE CHECK!

(** For International builders the component ref sheet is in the build doc **)

* Page 3/2nd col (Jim de K4GV0)

R105 should be (red-red-brown-gold). It is correct on install page.

R211 should be (red-black-orange-gold). It is correct on install page.

* Page 7, Socket Install

It has been suggested:

That header J100 be installed before the U114 and U115 sockets are

installed, due to the tight fit. (Jim de K4GV0)
TAPR NOTE: This will be corrected in the next run of the board.

* Page 9 (C113 and C114)

It has been suggested:

If you are putting zig-zags in the leads of the 0.1 caps to make them fit the hole spacing watch out for C113 and C114 as there are small land-holes between and the solder might wick over if the cap leads are touching the board at that spot. (Bob KC5EJK)

TAPR NOTE: The via location will be corrected in the next run of the board.

* Page 15/col 1

It has been suggested:

The power jumper that need to be added to the +5 of Pin 14 and Pin 1 of the resistor strip it would have been better if I had put the jumper in and then soldered the pins. I could have placed a small wire into the pad holes or wrapped around the pins. (Bob KC5EJK)

TAPR NOTE: This will be corrected in the next run of the board.

* Page 15/16

My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16. (Bob KC5EJK)

* Page 17 JP207 and JP212

These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212

TAPR NOTE: This will be corrected in the next board production.

* Page 18 P203AC Jack

The directions say to solder in at position P100, it should be position P203. Typo.

* Page 18/col 2 Crystal

It has been suggested:

Somehow reading the Crystal instructions misses telling people with a crystal with short leads that they need to make three wires. Two for the bottom leads and one for the can lead. Someone might mount the crystal upright. I hope when the instructions said flat it was telling me (on its side). (Bob KC5EJK)

TAPR NOTE: Mounting it on its side is the best solution, in case you want to mount a later board on top of the 2nd board (i.e. TNC-95, ethernet, etc). Some of the Xtals shipped had long leads and some didn't.

* Power Plug Install on line from transformer

I would suggest using some heat shrink when attaching the new plug to the power adapter cable. The stranded wire is large so you may want to remove a few strands to fit the center connector tab. You might also want to use tape or heat shrink for strain relief. (Bob KC5EJK)

50. Radio Port Configuration Notice

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 10 Jan 1995 11:59:55 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501101759.LAA24655@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

This Notice went out to all US builders in the stuff that was shipped yesterday and today. It is now also included in the build document.

WARNING !! % WARNING !!

Be sure to read the following paragraphs carefully.
You must configure your DSP-93 properly or you may cause your radio to go into a transmit mode after power up or reset. If your radio is placed in transmit, it may burn out a preamplifier or damage your radio. If you read and understand the following information you will not have a problem. These

are simple issues which must be considered when you allow external equipment to operate your radio.

The RADIO IO ports must be configured to a determined radio port control state at power up by strapping certain lines on the DB25 "Interface Port" interfacing the TNC. The monitor code checks the logical state of four lines after a power up or reset. The logical state of these lines will establish the initial output condition of the lines which control your radio's push to talk line and the external frequency shifter. It is suggested that you configure these lines with jumpers to +5 or ground according to the requirements of your radio. Refer to your radio's manual for information about how these signals will affect the radio's operation. In other words, do you ground your radio's PTT input to key your radio or do you take it to plus five volts? After you have it wired, test it with your equipment to be sure things are working as you expect. Remember, with computers and so many things to connect properly it is easy to get something wrong and cause a problem so double check everything.

The jumpers to configure the four radio control ports can be placed on a 20 pin header. This header will then plug into the extra connector placed on the ribbon cable connecting the DB25 "Interface Port" and the 20 pin header on board two.

Refer to section "IO Port Configuration Setup" of your assembly manual, near the back (page 33 of First Printing), for more information.

51. Re: [DSP-93:93] Radio Port Configuration Notice

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 10 Jan 1995 14:59:18 -0600
To: dsp-93@tapr.org
Message-ID: <ab38a325030210047f88@198.3.118.193>
Rendered body type: text/plain

>
>WARNING !! % WARNING !!
>
>Be sure to read the following paragraphs carefully.
>You must configure your DSP-93 properly or you may cause your radio to go
>into a transmit mode after power up or reset. If your radio is placed in
>transmit, it may burn out a preamplifier or damage your radio. If you read
>and understand the following information you will not have a problem. These
>are simple issues which must be considered when you allow external equipment
>to operate your radio.

I think it is also important to note that the DSP-93 (as well as most other radio modems) may cause your transmitter to go into transmit mode briefly when the DSP-93 is powered on and/or powered off. This can occur even if the initializations lines referred to in the "Radio Port Configuration Notice" are properly configured. Take precautions so that your equipment will not be damaged if this should occur.

Ron W5RKN

also:
w5rkn@amsat.org

52. More findings

From: Jeff Garrett <jeff@kcbbs.gen.nz>
Date: Wed, 11 Jan 1995 09:49:47 +1300 (NZDT)
To: dsp-93@tapr.org
Message-ID: <Pine.3.05.1.9501110947.A6484-a100000@kcbbs>
Rendered body type: text/plain

Hi
Further to my previous posting regarding the reset problem, I have found by cutting the track from pin 1 to pin 2 of U116 the reset circuit now functions correctly. Looking at the data on the MAX692 that I have available, I couldn't see why it was necessary to connect the Vout back to Vcc. If this change is to be done be careful cutting the track as it is very fine and it is a multilayer board. (Ref. Reset & Clock 2 of 3). I would appreciate any comments on this from Beta testers or cct designers.

On another subject with the build:-

1) I found a spacer was required behind the volume pot to allow it to fit clear of the chassis behind the front panel.

2) When testing using DOS, the .OBJ is not required as part of the

filename when loading from DSPLoad.

Having lotsa fun
73
Jeff ZL1BIV

53. Re MAX692

From: Ian Ashley <iana@kcbbs.gen.nz>
Date: Wed, 11 Jan 1995 10:39:23 +1300 (NZDT)
To: dsp-93@tapr.org
Message-ID: <Pine.3.05.1.9501111023.A6875-8100000@kcbbs>
Rendered body type: text/plain

I can confirm Jeff Garrett's findings re U116. I have cut the track between pins 1 and 2 and the dsp-93 is fully functional.
73 de Ian Ashley, ZL1A0X

54. U116 MAX692ACPA

From: Bob Stricklin <bstrick@tenet.edu>
Date: Tue, 10 Jan 1995 18:27:42 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501110027.SAA14113@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

Ian, good to hear you got your unit working.

U116 must be a MAX692ACPA as the parts list indicates. A MAX692AEP can be substituted. Any other version of the MAX692 will not work. We had a problem getting the wrong MAX chip in the bata build also. May need to contact the purchasing department and see if a buyer substituted an bad alternate. Hope not. Your temporary fix is ok but may not reset at power up every time. The only reason for using the MAX692ACPA was to provide a WDT reset capability. I think about .01% of the users will need this but we had some folks in this group that felt this was absolutely necessary.

Check the part number on U116 and let us know what the full number is. The chip will also have a date code symbolized on it, typically 94xx.

Have you got the unit interfaced with your PC yet and seen the instruments in the windows interface?

Bob Stricklin, N5BRG

55. Re: [DSP-93:97] U116 MAX692ACPA

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 10 Jan 1995 20:13:54 -0600
To: dsp-93@tapr.org
Message-ID: <ab38ed9201021004f9e9@[198.3.118.133]>
Rendered body type: text/plain

Bob,

>The only reason for using the MAX692ACPA was to provide a WDT reset capability.
>I think about .01% of the users will need this but we had some folks in this
>group that felt this was absolutely necessary.

What is a "WDT reset capability"?

Ron W5RKN

also:
w5rkn@amsat.org

56. MAX692ACPA

From: bobs@tcet.unt.edu (Bob Stricklin)
Date: Tue, 10 Jan 95 21:28:59 CST
To: dsp-93@tapr.org
Message-ID: <9501110329.AA162372@tcet.unt.edu>
Rendered body type: text/plain

As I stated earlier MAXIM makes more than one microprocessor supervisory chips with a part number which begins with MAX692. One of the chips is referred to as the MAX692 and the other is a MAX692A. Both has a suffix of CPA and EPA available in an 8 pin PDIP. The specs are different on the two parts. The MAX692 was supposed to be discontinued. I can not find a data sheet for the MAX692 to confirm anything about cutting the

Vcc and Vout connection. I do know that the data sheet for the MAX692A recommends connecting these two (page 5-13 of 1994 NR) when you are operating without backup power. We do not have backup power so they are connected.

When I selected this part (in 1992) I could not find one that had a manual reset and a WDT option in one chip. So I faked the MAX692A into a reset condition using R104 and R105 as a voltage divider. When the reset button is not pushed the voltage on pin 1 is 5.0 V. when the reset button is pushed the voltage (Pin 2 Vcc) goes down below 4.55 V and the MAX692A goes into a reset condition. So that is how it was designed to work.

I think I posted some comments on this after talking to MAXIM about this issue but I can not find my notes or email. Actually it was two computers and two hard disk ago and thousands of DSP-93 email back. I will talk to them tomorrow.

For the time being I do not think I would cut the trace mentioned if you have a MAX692CPA. If I can get a confirmation from MAXIM that this will work then I will pass it along. We would like this solution because you have the part and TAPR would not need to spend any more money on parts, postage, and volunteers time.

The TMS320C25 does requires a low level for about 200 mS and then a nice sharp going high. If you have any bounce in this signal you probably will not reset. I had some problems with this early on when I tried to get by with a simple RC circuit. Then I used a hall logic sensor and a magnet if you can believe that. It worked great but to expensive.

You can try placing a 100K to 1 meg resistor in the socket for U116 between pin 1 and pin 7. After a few pushes on the reset button you may be able to get your unit to reset.

I do not think I would cut any traces just yet.

Bob Stricklin, N5BRG

57. Re: [DSP-93:97] U116 MAX692ACPA

From: Ian Ashley <iana@kcbbs.gen.nz>
Date: Wed, 11 Jan 1995 18:26:10 +1300 (NZDT)
To: dsp-93@tapr.org
Message-ID: <Pine.3.05.1.9501111807.A10626-9100000@kcbbs>
Rendered body type: text/plain

Hi Bob,
the part is MAX692
CPA9438N

And on the underside

MPYB
XXA

S438

I hope that this will shed some light on the problem. The DSP-93 seems to come up ok when powered up and with the reset with the track cut between pins 1 and 2.

Re windows, no not yet, but Jeff, ZL1BIV has his going and says it looks great.

Tnx for the info.. Vy 73 de Ian ZL1A0X

58. chip U116

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 11 Jan 1995 02:59:43 GMT
To: dsp-93@tapr.org
Message-ID: <188317.27791654@acd.org>
Rendered body type: text/plain

I checked my MAX chip U116
and have almost the same data:

MAX692
CPA9438N
And on the underside

MPYB
XXA
9438 (Ian ZL1A0X reported a S438 here but may be a typo)

Bob KC5EJK

59. Re: [DSP-93:100] Re: U116 MAX692ACPA

From: Jeff Garrett <jeff@kcbbs.gen.nz>
Date: Thu, 12 Jan 1995 00:10:20 +1300 (NZDT)
To: dsp-93@tapr.org
Cc: dsp-93@tapr.org
Message-ID: <Pine.3.05.1.9501120017.A12981-9100000@kcbbs>
Rendered body type: text/plain

On Tue, 10 Jan 1995, Ian Ashley wrote:

> Hi Bob,
> the part is MAX692
> CPA9438N
>
> And on the underside
>
> MPYB
> XXA
>
> S438
>
>

Hi Bob
I can also confirm the same IC number as IAN..... It is not the "A"
version
73
Jeff ZL1BIV

60. Re: [DSP-93:98] Re: U116 MAX692ACPA

From: Bob Stricklin <bstrick@tenet.edu>
Date: Wed, 11 Jan 1995 20:36:36 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501120236.UAA00570@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

I have a good solution to our MAX692 vs MAX692A problem!

We need to ground pin 8 (VBAT). Then the unit will work fine with either of the two MAXIM chips. I found this out after three calls and two faxes to them today.

You will find a hole next to pin 8 of U116. This pad is connected to pin 8 on the circuit side (bottom) of the PC Board. Solder a short jumper wire from this pad to pin 3 of U116 (GROUND). Now you can use either device.

I have tested this with both types of chips and it does work fine.

No cuts are required on the board.

Bob Stricklin, N5BRG

61. Re:What is a WDT?

From: Bob Stricklin <bstrick@tenet.edu>
Date: Wed, 11 Jan 1995 20:49:59 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501120250.UAA02223@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

WDT stands for Watch Dog Timer. This is a reset circuit which will reset the DSP under certian conditions.

Pin 6 of U116 is the WDT input and it is connected to two pins of jumper J103. This jumper is connected to two of the IO select lines when a jumper is installed. J103 is also labeled WDT. When no jumper is installed WDT input is floating.

When WDT is floating the WDT is not active and no resets will occur.

When WDT is connected to a high or low signal then a transition must occur ever 1.6 mS or a reset will be issued.

We have not tried to use the WDT to date. When the time comes the firmware

and modem routines will need to be modified to utilize this feature. The hardware is there.

Bob Stricklin, N5BRG

62. UPDATE 1/12/95

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 12 Jan 1995 00:05:55 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501120605.AAA05228@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi everyone. Just a s note before the rest of the message.

1. All US folks should be receiving the missing parts later this week. They were shipped on Monday and Tuesday.
2. The replacement transformers will be shipped middle of next...they are due in on Monday.
3. The latest correction is important, so be sure to read the latest update!
4. Looks like we should be getting close to having a lot of you with operational units. Keep up the great work and the good comments. This first production actually has a lot less problems then many other first runs. That can be attributed to the many hours of work the beta-team put in. The stuff we are having problems with could have only been found with the production run. All logistical and not many design related.

Cheers - Greg

DSP-93 Build Suggestions
December '94 Production

Updated: 1/11/95

We will try to update this message as the build happens and post it so ever so often.

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', Subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94).

January 11th, 1995 Update Section

* MAX692CPA Part

The first production run of DSP-93 were shipped with a MX692CPA, instead of the required MAX692ACPA. The 'A', turns out to be significant. The solution for using this chip (692CPA) on the DSP-93 is simple:

Ground pin 8 (VBAT). Then, the unit will work fine with either of the two MAXIM chips (692CPA or 692ACPA). You will find a hole next to pin 8 of U116. This pad is connected to pin 8 on the circuit side (bottom) of the PC Board. Solder a short jumper wire from this pad to pin 3 of U116 (GROUND). Now you can use either device (692CPA or 692ACPA). This fix has been tested with both types of devices and it works fine. NO CUTS ARE REQUIRED ON THE BOARD.

* The following has been added to the build doc.

Be sure to read the following paragraphs carefully. You must configure your DSP-93 properly or you may cause your radio to go into a transmit mode after power up or reset. If your radio is placed in transmit, it may burn out a preamplifier or damage your radio. If you read and understand the following inThe RADIO IO ports must be configured to a determined radio port control state at power up by strapping certain lines on the DB25 "Interface Port" interfacing the TNC. The monitor code checks the logical state of four lines after a power up or reset. The logical state of these lines will establish the initial output condition of the lines which control your radio's push to talk line and the external frequency shifter. It is suggested that you configure these lines with jumpers to +5 or ground according to the requirements of your radio. Refer to your radio's manual for information about how these signals will affect

the radio's operation. In other words, do you ground your radio's PTT input to key your radio or do you take it to plus five volts? After you have it wired, test it with your equipment to be sure things are working as you expect. Remember, with computers and so many things to connect properly it is easy to get something wrong and cause a problem so double check everything.

The jumpers to configure the four radio control ports can be placed on a 20 pin header. This header will then plug into the extra connector placed on the ribbon cable connecting the DB25 "Interface Port" and the 20 pin header on board two.

Refer to section "IO Port Configuration Setup" of your assembly manual, near the back (page 33 of First Printing), for more information.

January 10th, 1995 Update Section

* Good News! A source for 1.5amp transformers has been located and transformers should no longer be a problem. They will be shipped to everyone notifying the office that they require a replacement supply. Supplies are expected into the office on January 17th.

* Typo. page 15 col 1 para 6. Should be R217 not R127 and perhaps at end of line add U205 pin 14. (Ian, ZL1A0X)

* Page 15 col2 ... suggest that C214 be included in group below or maybe highlight it some way. I was caught out and placed a 0.1 instead of 1.0UF cap in position C214. (Ian, ZL1A0X)

* Page 20 col 2 re speaker wire. There is not a square PCB pad as mentioned in 2nd from bottom paragraph. (Ian, ZL1A0X)
NOTE: The square pad was suppose to be the hole next to the edge of the board.

* Page 21 RESET button. Should mention that it is soldered onto board 1. There is also a reset position in the same area on Board 2. (Ian, ZL1A0X)

* When installing the interboard connectors JP201, JP202, JP203, and JP205 you need to be careful. Extra care is needed when handling the boards after they have been installed. (Jeff, ZL1BIV)

P.S. Congrats to Jeff, ZL1BIV and Ian, ZL1A0X for the first units finished and working.

January 2nd, 1995 Update Section

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Schematics Changes: On page 3 of 3 Digital:Power Supply
C118 & C119 are drawn twice: C119 once as a by-pass caps 0.1 and again as a 4.7 uF filter cap. and C118 in the power supply filter and in the by-pass cap drawing.
Change C119 from a 4.7 uF to a 0.1. Remove the extra C119. Change the extra C118 to C123. (Bob de N5BRG)

* Schematics Changes: On page 3 of 3 Digital:Power Supply
C123 is not on the diagram. It's a by-pass for U116 and is 0.1 uF. Add this to your schematic. (Bob de N5BRG)

* Schematics Changes: On page 2 of 3 Digital reset and Clock:
C110 : The value is not given just the labeled CAP. The value of C110 is 0.1 uF. Correct your schematic. (Bob de N5BRG)

* Page 19

The LED flats are small and hard to see. It might be a good double check and to mention the SHORT lead (cathode) goes in the square hole. The bend

is about where the marking crimp's are on the leads. (Bob Winingham KC5EJK)

LED leads are not always cut this way. We should mention this in case they are. Be sure to look at the flat of the package to double check. (Bob de N5BRG).

* Page 10/col 2

It has been suggested:

P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together. (Jim de K4GV0)

I have soldered a number of these connectors to boards by just placing the connector flat on the PC board and filling the three holes with solder. I used a 25W soldering iron. This method works. (Bob de N5BRG)

* R224 in parts and C207 on schematics

R224 was dropped in the production board, but was not removed from the parts list. This means you have an extra resistor for this part. It was removed from page 14 of the install. It is also shown on the schematics on page 1 of 5 along with a capacitor marked as C207. Both of these should be marked out in the schematic. They do not exist on the PC boards. The identifier C207 was used on the capacitor placed near U202 and it is connected to pins 1 and 2 of U202. This should be added to the schematic on page 3 of 5. C207 is a 22 pF capacitor. (Bob de N5BRG)

* Page 17 (JP208 2 pin Male Header)

JP208 was left off the parts list and parts placement diagram. It is in the install section. This is a two pin jumper located next to R215 on board 2. If you are short a jumper and you did not install J100 then cut a pin off this part and use it for J208. (Bob de N5BRG)

* You have a Mac and need to read the IBM disks.

I have a Macintosh and I had no problem using Apple File Exchange to read the two computer disks into my computer. In addition, PC Exchange version 2.0.2 on system 7.5 works fine. (Bob KC5EJK)

I used DOSMounter to read the files onto my Mac. (Greg, WD5IVD)

* Flux removal

There has been a long discussion on the best ways to handle flux removal. Refer to the dsp-93 mail list archives for the information.

December 30th, 1994 Update Section

* Be sure to check the bottom of the bags for parts that might be stuck. The enclosure hardware was in it's own little plastic bag.

* Inter-board connectors

When installing, make sure that the 83B parts (the longer ones) are used on board 2. Refer to the supplied sheet on the errata, which shows the connectors in 1:1 size for comparison. The shorter ones on Board 1 (bottom) will bet cut off, while the longer ones are used to connect it to board 2. The difference in lengths between 63B and 83B is about a 1/4 inch. These are almost impossible to remove when installed, so DOUBLE CHECK!
(** For International builders the component ref sheet is in the build doc **)

* Page 3/2nd col (Jim de K4GV0)

R105 should be (red-red-brown-gold). It is correct on install page.

R211 should be (red-black-orange-gold). It is correct on install page.

* Page 7, Socket Install

It has been suggested:

That header J100 be installed before the U114 and U115 sockets are installed, due to the tight fit. (Jim de K4GV0)

TAPR NOTE: This will be corrected in the next run of the board.

* Page 9 (C113 and C114)

It has been suggested:

If you are putting zig-zags in the leads of the 0.1 caps to make them fit the hole spacing watch out for C113 and C114 as there are small land-holes between and the solder might wick over if the cap leads are touching the board at that spot. (Bob KC5EJK)
TAPR NOTE: The via location will be corrected in the next run of the board.

* Page 15/col 1

It has been suggested:

The power jumper that need to be added to the +5 of Pin 14 and Pin 1 of the resistor strip it would have been better if I had put the jumper in and then soldered the pins. I could have placed a small wire into the pad holes or wrapped around the pins. (Bob KC5EJK)

TAPR NOTE: This will be corrected in the next run of the board.

* Page 15/16

My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16. (Bob KC5EJK)

* Page 17 JP207 and JP212

These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212

TAPR NOTE: This will be corrected in the next board production.

* Page 18 P203AC Jack

The directions say to solder in at position P100, it should be position P203. Typo.

* Page 18/col 2 Crystal

It has been suggested:

Somehow reading the Crystal instructions misses telling people with a crystal with short leads that they need to make three wires. Two for the bottom leads and one for the can lead. Someone might mount the crystal upright. I hope when the instructions said flat it was telling me (on its side). (Bob KC5EJK)

TAPR NOTE: Mounting it on its side is the best solution, in case you want to mount a later board on top of the 2nd board (i.e. TNC-95, ethernet, etc). Some of the Xtals shipped had long leads and some didn't.

* Power Plug Install on line from transformer

I would suggest using some heat shrink when attaching the new plug to the power adapter cable. The stranded wire is large so you may want to remove a few strands to fit the center connector tab. You might also want to use tape or heat shrink for strain relief. (Bob KC5EJK)

63. Re: [DSP-93:89] It works!

From: Kaj Wiik <kwi@seti.hut.fi>
Date: Thu, 12 Jan 1995 15:35:14 +0200 (EET)
To: dsp-93@tapr.org
Message-ID: <Pine.LNX.3.91.950112153225.5509E-100000@seti.hut.fi>
Rendered body type: text/plain

Sorry to ask these probably FAQ's but I didn't find these from the introduction:

o What is the part count of DSP-93 (IC/total)?

o What is the size of the two boards?

73,

Kaj
oh6eh@amsat.org

64. Parts Inventory

From: H. Paul Shuch n6tx (PAUL SHUCH) <PSHUCH@pct.edu>
Date: Thu, 12 Jan 1995 09:44:20 -0500
To: dsp-93@tapr.org
Message-ID: <sf14f971.001@pct.edu>
Rendered body type: text/plain

Hi, Greg and Bob!

Just finished inventory on my parts, and soldering in IC sockets. I must commend you on the excellent quality of documentation and the overall quality of the project. The internet list is a wonderful communications medium. By taking a few days to read over everybody else's experiences, I'm sure I've been spared some major pains and inconveniences.

Somebody on the list mentioned being short one 0.22 ohm resistor. Me too.

I also had one spare 20 k ohm resistor, and (with the elimination of R224) a spare 100 k ohm as well.

Everything else in the kit is in good order, except that (as reported previously) I had a 1 A power supply.

I've completed thru the left hand column of Page 8 with no difficulties whatever. I followed the advice articulated in dsp-93:87 regarding inserting J100 before the U114 and U115 sockets. Seems like a worthy suggestion.

My build will continue to go slowly and deliberately. I had originally planned to use student labor in the assembly. but after reading the instructions cover to cover (yes, somebody actually did that first!) decided that this is one kit I want to put together myself. Years back, I had my students build up a TNC-2 (or was it TNC-1?) kit. I spent more hours in rework and troubleshooting than I saved in construction.

Once again, the design, alpha and beta teams are to be highly commended. This is a beautiful kit.

Vy 73, Paul n6tx

65. Re: Help DSP-93

From: rparsons@bga.com (Ronald G. Parsons)
Date: Thu, 12 Jan 1995 19:47:33 -0600
To: Antonio Fernandez <100341.640@compuserve.com>
Cc: dsp-93@tapr.org
Message-ID: <ab3b8aa9000210042177@[198.3.118.210]>
Rendered body type: text/plain

Toni,

I hope I can help. It is very important to get on the DSP-93 list. It is not clear from you note whether you were successful in doing so. You will get a response from the list server when you do.

To subscribe to these groups:

1. Send e-mail to 'listserv@tapr.org'
2. Subject 'Request'
3. Message body:
 subscribe dsp-93 First_Name Last_Name
 subscribe dsp First_Name Last_Name

Your first problem has been addressed on DSP-93.

* MAX692CPA Part

The first production run of DSP-93 were shipped with a MX692CPA, instead of the required MAX692ACPA. The 'A', turns out to be significant. The solution for using this chip (692CPA) on the DSP-93 is simple:

Ground pin 8 (VBAT). Then, the unit will work fine with either of the two MAXIM chips (692CPA or 692ACPA). You will find a hole next to pin 8 of U116. This pad is connected to pin 8 on the circuit side (bottom) of the PC Board. Solder a short jumper wire from this pad to pin 3 of U116 (GROUND). Now you can use either device (692CPA or 692ACPA). This fix has been tested with both types of devices and it works fine. NO CUTS ARE REQUIRED ON THE BOARD.

Good luck!

```
>Today I finished the construction of the DSP-93 kit but it does not work yet
>:-(.
>When doing some hardware debugging, #2 in the assembly manual (12/5/94), I see
>that Pin7 on U116 does not rest in a high state, instead +5 VDC, the reading in
>my VOM
>is 0 VDC. The manual points to this problem twice but my question is how can I
>solve
>it? According to the schematics pin #7 on U116 is conected to the RESET RS line
>of the DSP chip.
>Any help would be welcome!!!
>
>BTW, I tried to subscribe to the DSP-93 mail group @tapr.org but I haven't got
>any
>mail yet, is someone here on this mail list also?
>
>best 73s, Toni.
>
>ea4le@amsat.org
```

Ron W5RKN

also:
w5rkn@amsat.org

66. Re: [DSP-93:107] Parts Inventory

From: rdavis@qualcomm.com (Roy Davis)
Date: Tue, 10 Jan 1995 18:04:53 -0800
To: dsp-93@tapr.org
Message-ID: <199501130209.SAA01244@qualcomm.com>
Rendered body type: text/plain

> Somebody on the list mentioned being short one 0.22 ohm resistor. Me too.
> I also had one spare 20 k ohm resistor, and (with the elimination of
R224) a > spare 100 k ohm as well.

I have exactly the same situation. 0.22 Ohm resistors are hard to come by.

73

Roy Davis - WB9RKN
7450 Keisha Terrace
San Diego CA 92126-6092

67. Re: [DSP-93:109] Re: Parts Inventory

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 12 Jan 1995 21:41:25 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501130341.VAA03357@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi everyone.

Hopefully someone is out there reading the dspupdate file.

The .22 was shipped to all US kit builders with their missing parts.

You should have a spare 20K and 100K, since R224 and the res that 20K was
were dropped in the production but not in the list given to the kit builder.
Spare parts (I believe) are not a problem :-). It those missing parts that
get you :-)

Greg

According to Roy Davis:

>
> > Somebody on the list mentioned being short one 0.22 ohm resistor. Me too.
> > I also had one spare 20 k ohm resistor, and (with the elimination of
> R224) a > spare 100 k ohm as well.
>
> I have exactly the same situation. 0.22 Ohm resistors are hard to come by.
>
> 73
>
> Roy Davis - WB9RKN
> 7450 Keisha Terrace
> San Diego CA 92126-6092
>
>

68. Problem

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 13 Jan 1995 02:41:19 GMT
To: dsp-93@tapr.org
Message-ID: <65534.38169399@acd.org>
Rendered body type: text/plain

I have finished the DSP-93 and have a problem.

The power led lights and the DC voltages look OK. 4.98 vdc
The Yellow LED comes on but Flashes 3 or 4 time very fast
and then stays on as the notes say.

The reset will reset the Yellow LCD and also cause it to
flash a few times and stay on

I wonder if the flashes have a meaning?

I am not getting the * prompt

I am using a temporary 9 VAC 1.3 amp wall power supply and may be getting marginal input AC voltage 9.5 vac.

The heat sinks get very warm (you can hold on to them but you will want to let go.)

I did have some problems with two of the static RAM sockets. This IC pins would not go into several of the pin holes and I had to use a leg off a spare IC to work the hole into accepting a leg.

(I may have gotten the socket leg too hot when soldering or some of the sticky de-flux gunk may have run wicked into the socket hole when I used Iso-propyl to clean the board. I should have stood on its end and not upside down.

I have started a trouble shooting review.

0. Do the Flashed have a meaning ?

1. Can I test the CPU board without it connected to the second board ?

2. Should I remove IC before re-soldering any joints ?

Bob KC5EJK

69. Re: [DSP-93:111] Problem

From: rparsons@bga.com (Ronald G. Parsons)
Date: Fri, 13 Jan 1995 08:12:23 -0600
To: dsp-93@tapr.org
Message-ID: <ab3c3942000210042719@[198.3.118.163]>
Rendered body type: text/plain

Bob KC5EJK

>The reset will reset the Yellow LCD and also cause it to
>flash a few times and stay on
>

>I wonder if the flashes have a meaning?

Yes, they mean a reset was done :-) Give a visual indication of success.

>I am not getting the * prompt

Are you sure you have all the necessary wires in your serial cable. If I remember correctly, you may be using a Mac. The cable requires RTS,CTS and not all serial cables carry this.

>I am using a temporary 9 VAC 1.3 amp wall power supply
>and may be getting marginal input AC voltage 9.5 vac.

Have you measured the voltages? Looked at the on a scope to see if there are any dips at 60 Hz?

>The heat sinks get very warm (you can hold on to them but you
>will want to let go.)

Normal.

>I have started a trouble shooting review.

>

>0. Do the Flashed have a meaning ?

See above.

>1. Can I test the CPU board without it connected to the second board ?

I don't know of a way.

>2. Should I remove IC before re-soldering any joints ?

I would IF you suspect wicking, but not otherwise (my opinion)

Ron W5RKN

also:
w5rkn@amsat.org

70. Re: [DSP-93:112] Re: Problem

From: Mark L. Hammond <hammond@camel.campbell.edu>
Date: Fri, 13 Jan 1995 09:57:56 -0500
To: dsp-93@tapr.org
Message-ID: <9501131452.AA06293@camel.campbell.edu>
Rendered body type: text/plain

Just a reminder...check out the handshaking used by your terminal program.
You should set it for NO handshaking whatsoever...this burns me from time
to time when I switch terminal programs or operating systems.

```
>Bob KC5EJK
>
>
>
>>I am not getting the * prompt
>
>Are you sure you have all the necessary wires in your serial cable. If I
>remember correctly, you may be using a Mac. The cable requires RTS,CTS and
>not all serial cables carry this.
>
```

Mark L. Hammond, Ph. D. (KC4EBR)
hammond@camel.campbell.edu

Campbell University
Department of Biology
Buies Creek, NC 27506
1-919-893-1734 or
1-800-334-4111, ext. 1734

71. Mating interference Fit

From: vince@rfsi.com
Date: Fri, 13 Jan 1995 14:19:47 GMT
To: dsp-93@tapr.org
Message-ID: <9501131409.D6195IP@rfsi.com>
Rendered body type: text/plain

Date: Fri, 13 Jan 95 14:09:39 EST

Hello all,

I just received the shortages and have run into an issue
with the stackup of the boards. My set ends up with a 2mm
interference in the overall stackup. The top modular connector
will not seat down against the AIO board when the proper
stackup is made.

I measured the stackup as follows:

Long modular connector Overall length: 29 mm
Modular connector header height above board: 8 mm
Maximum penetration depth into header: 4 mm
Top (AIO) PCB thickness: 1.2mm
Spacer length: 21 mm

On analysing the stackup, I found that my particular setup
has approximately 2 mm interference. This confirmed my physical
check of the fit. I have not soldered the connectors in yet. I
would like to wait until I hear if anyone else has had this
problem.

Vince, kd7ai@amsat.org vince@rfsi.com

72. Re: [DSP-93:114] Mating interference Fit

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 13 Jan 1995 13:46:19 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501131946.NAA19027@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Vince, you should have received two sets of connectors along with a
comparsion sheet.

Match the connectors to that sheet to make sure you have the correct length
connectors matched.

There are (4) four connectors that are 83B length and (3) three that are the 63B length. The 63B go with the bottom board 1 and they are about 1/4" shorter than the longer 83B inter-board connectors. The 83B go in the board 2 (top) board. The only remaining interboard connector is a 31B (4) pin connector which will be placed on board 1. (bottom)

I am glad you checked before soldering....I guess we said that enough in the docs.

Check your connectors against that one-to-one comparison sheet and see if that fixes your problem. Hopefully it is just a id problem because the connectors are so close in size.

Long pins (83B) go on board 2 and short pins (63B) go on the bottom board #1.

The longer pins of the 83B connector should fit about right, while the 63B connectors used in the wrong place will come up short as you have seen.

The only other connector that might confuse folks is the 31B (4) pin interboard connector used on the bottom board 1.

Let us know.

Greg

According to vince@rfsi.com:

```
>
> Date: Fri, 13 Jan 95 14:09:39 EST
>
>
> Hello all,
>
> I just received the shortages and have run into an issue
> with the stackup of the boards. My set ends up with a 2mm
> interference in the overall stackup. The top modular connector
> will not seat down against the AIO board when the proper
> stackup is made.
>
> I measured the stackup as follows:
>
> Long modular connector Overall length: 29 mm
> Modular connector header height above board: 8 mm
> Maximum penetration depth into header: 4 mm
> Top (AIO) PCB thickness: 1.2mm
> Spacer length: 21 mm
>
> On analysing the stackup, I found that my particular setup
> has approximately 2 mm interference. This confirmed my physical
> check of the fit. I have not soldered the connectors in yet. I
> would like to wait until I hear if anyone else has had this
> problem.
> Vince, kd7ai@amsat.org   vince@rfsi.com
>
```

73. Re: [DSP-93:114] Mating interference Fit

From: Roy Welch <rdw@crl.com>
Date: Fri, 13 Jan 1995 11:58:52 -0800 (PST)
To: dsp-93@tapr.org
Cc: dsp-93@tapr.org
Message-ID: <Pine.SUN.3.91.950113115545.22683A-100000@crl3.crl.com>
Rendered body type: text/plain

On Fri, 13 Jan 1995 vince@rfsi.com wrote:

```
> Date: Fri, 13 Jan 95 14:09:39 EST
>
>
> Hello all,
>
> I just received the shortages and have run into an issue
> with the stackup of the boards. My set ends up with a 2mm
> interference in the overall stackup. The top modular connector
> will not seat down against the AIO board when the proper
> stackup is made.
>
> I measured the stackup as follows:
>
```

> Long modular connector Overall length: 29 mm
> Modular connector header height above board: 8 mm
> Maximum penetration depth into header: 4 mm
> Top (AIO) PCB thickness: 1.2mm
> Spacer length: 21 mm
>
> On analysing the stackup, I found that my particular setup
> has approximately 2 mm interference. This confirmed my physical
> check of the fit. I have not soldered the connectors in yet. I
> would like to wait until I hear if anyone else has had this
> problem.
> Vince, kd7ai@amsat.org vince@rfsi.com

I don't have this problem on my Beta board. The corner spacers I have are 22.5mm long. The headers here extend 8mm above the board as you do.

73, Roy -- W0SL

74. Re: [DSP-93:114] Mating interference Fit

From: Bob Stricklin <bstrick@tenet.edu>
Date: Fri, 13 Jan 1995 22:18:29 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501140418.WAA08747@Gayle-Gaston.tenet.edu>
Rendered body type: text/plain

Vince, It looks like your spacers are about 1.2 mm shorter than the ones we used in earlier builds. Please use some 1.2 to 1.5 mm washers between the spacers and the bottom board. The 4 9.8 mm threaded standoff used on the bottom of the digital board will keep this all together.

Also remeasure your spacers and post what you get. May need to have Greg change the length of these spacers for future orders.

Bob Stricklin, N5BRG

75. Re: [DSP-93:117] Re: Mating interference Fit

From: Greg Jones <gjones@tenet.edu>
Date: Fri, 13 Jan 1995 23:00:36 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501140500.XAA03903@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

Vince, Bob and myself talked on the phone tonight and it does look like some of the batch of spacers we received are about 1mm shorter than some of the others.

If the builder places the bottom inter-board connectors nice and flat, this leaves about a .5mm+ space between the top of the spacer and the top board. That is if the top connectors are also placed nice and flat. If the builder places the bottom inter-board connectors a little up then the gap will increase based on the error.

It is not suggested that the builder screw down the screws so as to place stress on the top board. The best solution will be on a case by case basis. If you notice a gap of between .5mm and 1mm between the top of the spacer and the bottom of the top board, then simply place a small washer in the gap. This is the simplest way to correct the problem. The other way is to just tighten the screws so that they are secure, but not bending the board.

Thanks for catching this.

Greg

According to Bob Stricklin:

>
> Vince, It looks like your spacers are about 1.2 mm shorter than the ones we
> used in earlier builds. Please use some 1.2 to 1.5 mm washers between the
> spacers and the bottom board. The 4 9.8 mm threaded standoff used on the
> bottom of the digital board will keep this all together.
>
> Also remeasure your spacers and post what you get. May need to have Greg
> change the length of these spacers for future orders.
>
> Bob Stricklin, N5BRG
>
>
>

76. Build Update 1/14/95

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 14 Jan 1995 00:47:24 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501140647.AAA23651@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

DSP-93 Build Suggestions
December '94 Production

Updated: 1/15/95

We will try to update this message as the build happens and post it so ever so often.

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', Subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94).

January 14th, 1995 Update Section

* Spacers used between boards

It has come to the attention of the project that not all the spacers are the same length. There is a difference of about 1mm in the two type of spacers. If the builder has these slightly shorter spacers, then when the two boards are stacked there will be a slight space between the top of the spacer and the bottom of the top board when the interboard connectors are placed fully into position. It is NOT suggested that the builder secure down the screws so as to place stress on the top board. The best solution will be on a case by case basis. If you notice a gap of between .5mm and 1mm between the top of the spacer and the bottom of the top board, then simply place a small washer in the gap. This is the simplest way to correct the problem. The other way is to just tighten the screws so that they are secure, but not placing stress on the top board. (Thanks to Vince KD7AI for catching this)

* PC and Mac serial hookup

Answers to questions regarding a problem about getting a computer to talk out the serial line to the dsp-93.

-- Are you sure you have all the necessary wires in your serial cable. If I remember correctly, you may be using a Mac. The cable requires RTS,CTS and not all serial cables carry this. (Ron, W5RKN)

-- check out the handshaking used by your terminal program. You should set it for NO handshaking whatsoever...this burns me from time to time when I switch terminal programs or operating systems. (Mark, KC4EBR)

January 11th, 1995 Update Section

* MAX692CPA Part

The first production run of DSP-93 were shipped with a MX692CPA, instead of the required MAX692ACPA. The 'A', turns out to be significant. The solution for using this chip (692CPA) on the DSP-93 is simple:

Ground pin 8 (VBAT). Then, the unit will work fine with either of the two MAXIM chips (692CPA or 692ACPA). You will find a hole next to pin 8 of U116. This pad is connected to pin 8 on the circuit side (bottom) of the PC Board. Solder a short jumper wire from this pad to pin 3 of U116 (GROUND). Now you can use either device (692CPA or 692ACPA). This fix has been tested with both types of devices and it works fine. NO CUTS ARE REQUIRED ON THE BOARD.

* The following has been added to the build doc.

Be sure to read the following paragraphs carefully.

You must configure your DSP-93 properly or you may cause your radio to go into a transmit mode after power up or reset. If your radio is placed in transmit, it may burn out a preamplifier or damage your radio. If you read and understand the following inThe RADIO IO ports must be configured to a

determined radio port control state at power up by strapping certain lines on the DB25 "Interface Port" interfacing the TNC. The monitor code checks the logical state of four lines after a power up or reset. The logical state of these lines will establish the initial output condition of the lines which control your radio's push to talk line and the external frequency shifter. It is suggested that you configure these lines with jumpers to +5 or ground according to the requirements of your radio. Refer to your radio's manual for information about how these signals will affect the radio's operation. In other words, do you ground your radio's PTT input to key your radio or do you take it to plus five volts? After you have it wired, test it with your equipment to be sure things are working as you expect. Remember, with computers and so many things to connect properly it is easy to get something wrong and cause a problem so double check everything.

The jumpers to configure the four radio control ports can be placed on a 20 pin header. This header will then plug into the extra connector placed on the ribbon cable connecting the DB25 "Interface Port" and the 20 pin header on board two.

Refer to section "IO Port Configuration Setup" of your assembly manual, near the back (page 33 of First Printing), for more information.

January 10th, 1995 Update Section

* Good News! A source for 1.5amp transformers has been located and transformers should no longer be a problem. They will be shipped to everyone notifying the office that they require a replacement supply. Supplies are expected into the office on January 17th.

* Typo, page 15 col 1 para 6. Should be R217 not R127 and perhaps at end of line add U205 pin 14. (Ian, ZL1A0X)

* Page 15 col2 ... suggest that C214 be included in group below or maybe highlight it some way. I was caught out and placed a 0.1 instead of 1.0UF cap in position C214. (Ian, ZL1A0X)

* Page 20 col 2 re speaker wire. There is not a square PCB pad as mentioned in 2nd from bottom paragraph. (Ian, ZL1A0X)
NOTE: The square pad was suppose to be the hole next to the edge of the board.

* Page 21 RESET button. Should mention that it is soldered onto board 1. There is also a reset position in the same area on Board 2. (Ian, ZL1A0X)

* When installing the interboard connectors JP201, JP202, JP203, and JP205 you need to be careful. Extra care is needed when handling the boards after they have been installed. (Jeff, ZL1BIV)

P.S. Congrats to Jeff, ZL1BIV and Ian, ZL1A0X for the first units finished and working.

January 2nd, 1995 Update Section

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Schematics Changes: On page 3 of 3 Digital:Power Supply
C118 & C119 are drawn twice: C119 once as a by-pass caps 0.1 and again as a 4.7 uF filter cap. and C118 in the power supply filter and in the by-pass cap drawing.
Change C119 from a 4.7 uF to a 0.1. Remove the extra C119. Change the extra C118 to C123. (Bob de N5BRG)

* Schematics Changes: On page 3 of 3 Digital:Power Supply
C123 is not on the diagram. It's a by-pass for U116 and is 0.1 uF. Add this to your schematic. (Bob de N5BRG)

* Schematics Changes: On page 2 of 3 Digital reset and Clock:
C110 : The value is not given just the labeled CAP. The value of C110 is 0.1 uF. Correct your schematic. (Bob de N5BRG)

* Page 19

The LED flats are small and hard to see. It might be a good double check and to mention the SHORT lead (cathode) goes in the square hole. The bend is about where the marking crimp's are on the leads. (Bob Winingham KC5EJK)

LED leads are not always cut this way. We should mention this in case they are. Be sure to look at the flat of the package to double check. (Bob de N5BRG).

* Page 10/col 2

It has been suggested:

P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together. (Jim de K4GV0)

I have soldered a number of these connectors to boards by just placing the connector flat on the PC board and filling the three holes with solder. I used a 25W soldering iron. This method works. (Bob de N5BRG)

* R224 in parts and C207 on schematics

R224 was dropped in the production board, but was not removed from the parts list. This means you have an extra resistor for this part. It was removed from page 14 of the install. It is also shown on the schematics on page 1 of 5 along with a capacitor marked as C207. Both of these should be marked out in the schematic. They do not exist on the PC boards. The identifier C207 was used on the capacitor placed near U202 and it is connected to pins 1 and 2 of U202. This should be added to the schematic on page 3 of 5. C207 is a 22 pF capacitor. (Bob de N5BRG)

* Page 17 (JP208 2 pin Male Header)

JP208 was left off the parts list and parts placement diagram. It is in the install section. This is a two pin jumper located next to R215 on board 2. If you are short a jumper and you did not install J100 then cut a pin off this part and use it for J208. (Bob de N5BRG)

* You have a Mac and need to read the IBM disks.

I have a Macintosh and I had no problem using Apple File Exchange to read the two computer disks into my computer. In addition, PC Exchange version 2.0.2 on system 7.5 works fine. (Bob KC5EJK)

I used DOSMounter to read the files onto my Mac. (Greg, WD5IVD)

* Flux removal

There has been a long discussion on the best ways to handle flux removal. Refer to the dsp-93 mail list archives for the information.

December 30th, 1994 Update Section

* Be sure to check the bottom of the bags for parts that might be stuck. The enclosure hardware was in it's own little plastic bag.

* Inter-board connectors

When installing, make sure that the 83B parts (the longer ones) are used on board 2. Refer to the supplied sheet on the errata, which shows the connectors in 1:1 size for comparison. The shorter ones on Board 1 (bottom) will be cut off, while the longer ones are used to connect it to board 2. The difference in lengths between 63B and 83B is about a 1/4 inch. These are almost impossible to remove when installed, so DOUBLE CHECK!

(** For International builders the component ref sheet is in the build doc **)

* Page 3/2nd col (Jim de K4GV0)

R105 should be (red-red-brown-gold). It is correct on install page.

R211 should be (red-black-orange-gold). It is correct on install page.

* Page 7, Socket Install

It has been suggested:

That header J100 be installed before the U114 and U115 sockets are installed, due to the tight fit. (Jim de K4GV0)

TAPR NOTE: This will be corrected in the next run of the board.

* Page 9 (C113 and C114)

It has been suggested:

If you are putting zig-zags in the leads of the 0.1 caps to make them fit the hole spacing watch out for C113 and C114 as there are small land-holes between and the solder might wick over if the cap leads are touching the board at that spot. (Bob KC5EJK)

TAPR NOTE: The via location will be corrected in the next run of the board.

* Page 15/col 1

It has been suggested:

The power jumper that need to be added to the +5 of Pin 14 and Pin 1 of the resistor strip it would have been better if I had put the jumper in and then soldered the pins. I could have placed a small wire into the pad holes or wrapped around the pins. (Bob KC5EJK)

TAPR NOTE: This will be corrected in the next run of the board.

* Page 15/16

My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16. (Bob KC5EJK)

* Page 17 JP207 and JP212

These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212

TAPR NOTE: This will be corrected in the next board production.

* Page 18 P203AC Jack

The directions say to solder in at position P100, it should be position P203. Typo.

* Page 18/col 2 Crystal

It has been suggested:

Somehow reading the Crystal instructions misses telling people with a crystal with short leads that they need to make three wires. Two for the bottom leads and one for the can lead. Someone might mount the crystal upright. I hope when the instructions said flat it was telling me (on its side). (Bob KC5EJK)

TAPR NOTE: Mounting it on its side is the best solution, in case you want to mount a later board on top of the 2nd board (i.e. TNC-95, ethernet, etc). Some of the Xtals shipped had long leads and some didn't.

* Power Plug Install on line from transformer

I would suggest using some heat shrink when attaching the new plug to the power adapter cable. The stranded wire is large so you may want to remove a few strands to fit the center connector tab. You might also want to use tape or heat shrink for strain relief. (Bob KC5EJK)

77. Low Profile

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 14 Jan 1995 00:56:33 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501140656.AAA24244@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

I am going to be taking a pretty low profile in the group now that school has started for me and the first production is completed Monday when we get the transformers out. Someone in the dsp93dev group will be taking over the dspupdate file.

Time for me to get back to the real important stuff. My candidacy exams are in April :-)

This group should be able to help everyone get their units completed and on the air. Good luck everyone -- I'll be monitoring and let the dsp-93 development group take over. That what they are for.

See you all again in April when the next batch goes out.

More fun!

I am looking forward to see everyone having fun with their new toy.

78. PROBLEM FIXED

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 14 Jan 1995 00:27:18 GMT
To: dsp-93@tapr.org
Message-ID: <4644799.43142804@acd.org>
Rendered body type: text/plain

The no (*) problem:

Thanks to Mark L. Hammond, Ph. D. (KC4EBR) and Ron W5RKN for pointing me in the correct direction on my problems.

Here are two items you might want to add to the Final Check Notes:

(1)

Power on reset test:

The Yellow computer reset light doesn't just come on as listed on page 23 test
it flashes several times and then stays on.

I thought it was sending me morse code diagnostic error messages :-)

(2)

RS-232 terminal port:

Handshaking RTS RS-232 pin 4 (pin 7 on the DB-9) needs to be SPACE (+)
to enable the DSP-93 to send data to the terminal.

The Assembly manual said to start off with no hardware handshaking but the DSP-93 needs RTS to be high to send information to the terminal.

I used a RS-232 test box when first connecting the DSP-93 via the Radio shack adapter. I always double check that the two systems are not trying to xmit on the same pin. Switching pins 2 and 3 in communications cables can be a full time job.

When testing a new RS-232 comm. device I always connect RS-232 pins 4 to 5 and
6 to 20

Then if the device needs handshaking it gives it to itself.
This is the first time this trick has not worked.

** This did not work with the DSP-93 as RS-232 pin 5 CTS stayed low.
It looks like this is software controlable but we still need to let users know. I don't know yet which programs will need b-directional flow control. I have just started to play with the loader.

Bob KC5EJK Dallas

79. it works

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 14 Jan 1995 00:31:47 GMT
To: dsp-93@tapr.org
Message-ID: <65502.43142848@acd.org>
Rendered body type: text/plain

I have the DSP-93 up and running.
The unit looks real nice it its box

I had an intermitted CPU operations caused by a cold solder joint some where on one board. I did a re-solder of all joints except the CPU chip socket and the problem has not returned.

I used the Radio Shack 9 VAC 1.3 Amp power unit and a Radio Shack plug for power as the 1.5 amp unit is delayed. I had no power problem in over three hours of testing with this wall module.

I have several lock washers left over and I can't remember where I was to have used them.

We are have a DFW AMSAT breakfast on Saturday and I am taking the DSP-93 for "show and tell". I am without a portable computer so it will be more tell than show. :-)

80. Lock Washers

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 14 Jan 1995 03:38:59 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501140938.DAA29010@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

One last note, before I disappear in school work.

Bob Winingham reported some extra lock washers.

Those are not documented in the build manual because we never came up with a solution for the following problem.

The development group always felt that users should have some easy way to label the front LEDs depending on the software loaded. Thus the user should be able to label functions for the LEDs on the front panel. The development group just ran out of time on this issue.

The goal was maybe to use the lockwashers (2 of them) on the bottom two front screws to hold some type of plastic or paper insert that could be changed depending on what was being done.

So, if someone has a suggestion on how we can do this at a low to no cost for the kits, then I might just assign an award :-)

I will leave this to the dsp-93 kit builders and the dsp93 development group to solve for the next production.

Greg, WD5IVD

P.S> I guess we could always send a crayon with the kit and people could mark up the nice faceplate :-()

81. Re: [DSP-93:122] it works

From: creek!hammond@camel.campbell.edu (Mark L. Hammond)
Date: Sat, 14 Jan 1995 14:25:47 +0000 (GMT)
To: camel!tapr.org!dsp-93
Message-ID: <m0rT9QK-00005bC@creek.uucp>
Rendered body type: text/plain

Bob,

Congrats on the working unit! Let us know what impressions the unit made at the AMSAT breakfast....

Get that DSP on the air!!!! :)

--

Mark L. Hammond [KC4EBR]

82. DSP-93 serial flow control

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sat, 14 Jan 1995 09:29:31 -0600
To: dsp-93@tapr.org
Message-ID: <ab3d9b9d010210046823@[198.3.118.246]>
Rendered body type: text/plain

In Re: [DSP-93:121] PROBLEM FIXED, Bob KC5EJK Dallas said:

```
>(2)
>RS-232 terminal port:
>Handshaking RTS RS-232 pin 4 ( pin 7 on the DB-9) needs to be SPACE (+)
>to enable the DSP-93 to send data to the terminal.
>
>-----
>The Assembly manual said to start off with no hardware handshaking but
>the DSP-93 needs RTS to be high to send information to the terminal.
>
>...
>I don't know yet which programs will need b-directional
>flow control. I have just started to play with the loader.
```

- Don't confuse two things:
1. Terminal (or computer) supplying and asserting RTS, and
 2. Hardware handshaking

It is true the the DSP-93 monitor requires RTS to be asserted in order to send data to the terminal, but other than that, no hardware handshake in the sense of data flow control is in place. Software handshake (X-on/X-off) is not implemented either.

Experience has shown that the DSP-93 can accept data at 19.2 kbps without problem but not all terminals (or terminal emulators in your computer) can accept a continuous flow of data at that rate.

Ron W5RKN

also:
w5rkn@amsat.org

83. Help Tucson

From: dmedley@dconcepts.com
Date: Wed, 11 Jan 95 12:08:26 EST
To: DSP-93@tapr.org
Message-ID: <9501111208.D7571nP@dconcepts.com>
Rendered body type: text/plain

I need to get in touch with a DSP-93 kit builder/owner in the Tucson area. If anyone has any information I would appreciate it.
de Dave KI6QE

84. Working OK

From: Ian Ashley <iana@kcbbs.gen.nz>
Date: Sun, 15 Jan 1995 17:36:06 +1300 (NZDT)
To: dsp-93@tapr.org
Message-ID: <Pine.3.05.1.9501151706.A17207-9100000@kcbbs>
Rendered body type: text/plain

Hi Greg. My DSP unit is working ok, with 2 way 1200 baud packet and the cw filter seems to be quite effective on HF cw reception. Next step is the 9600 packet, but unable to work on this until next week.
Tnx again to all. Vy 73 Ian Ashley ZL1A0X 15 Jan 1995

85. Re: [DSP-93:127] Working OK

From: Bob Stricklin <bstrick@tenet.edu>
Date: Sat, 14 Jan 1995 23:05:18 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501150505.XAA15397@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

According to Ian Ashley:

>
> Hi Greg. My DSP unit is working ok, with 2 way 1200 baud packet and the cw
> filter seems to be quite effective on HF cw reception. Next step is the
> 9600 packet, but unable to work on this until next week.
> Tnx again to all. Vy 73 Ian Ashley ZL1A0X 15 Jan 1995
>

Good to hear you got the unit working Ian. Once you get all the radio interface stuff worked out the fun can really start. Looking forward to more operating reports from you as you get things working.

Bob Stricklin, N5BRG

86. Configuration at startup/reset

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sun, 15 Jan 1995 08:27:01 -0600
To: dsp-93@tapr.org
Message-ID: <ab3ee09e01021004c3b2@[198.3.118.194]>
Rendered body type: text/plain

I received a question re: Configuration at startup/reset on K0-25 from VE3EG0.

I thought the question and my response might be of use to others.

To : VE3EGO
From: W5RKN
Time: 042845UTC
Date: 15 Jan 1995

Hello Syd,

> I have a question concerning configuring the Radio I/O ports
> on the DSP93. I have to admit that I am puzzled with the programming
> notes in the Assembly Manual page 33 and the note re configuring
> the ports in the January 11th 95 Update Section of the Build Notes.
> Am I right in saying that the reason for configuring the Radio I/O
> ports is that when the DSP93 is turned on or reset, that the '93
> will allow the radios to remain in their quiescent states.

That is correct, e.g. PTT off and UP/DOWN inactive.

> In order to program the jumpers on the interface header, if we determine
> the quiescent state of the PTT and Freq Up/Down lines on each radio by
> measuring the potentials on these lines and then programming the jumpers
> accordingly eg. if the quiescent state of the PTT line was High then the jumper
> for that line would also be set to High. The same would be done for the
> freq Up/Down line. Is this the correct procedure Bob?

The state you want is not determined by measuring, but by referring to your transmitter's manual. For example, Icom transceivers key the transmitter by bringing PTT low. Thus you want the quiescent state of the PTT line to be high so as not to transmit upon reset. Similarly, UP/DOWN tuning is done by bringing UP or DOWN low. Thus you want the quiescent state of the UP/DOWN lines to be high so as not to tune the transmitter. Thus for Icom transmitters on both radio ports, all four jumpers are wired high.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

Austin, Texas USA
Internet : w5rkn@amsat.org
SAT : KO-23, KO-25

Ron W5RKN

also:
w5rkn@amsat.org

87. Some eratta and other complications I found

From: kalkjz@tiger.jvnc.net (Ron Barnes)
Date: Sun, 15 Jan 1995 12:06:54 -0500
To: dsp-93@tapr.org
Message-ID: <199501151707.AA22742@tiger.jvnc.net>
Rendered body type: text/plain

Well, got most of my DSP-93 built, still waiting for those #5*&! parts that have been shorted during the initial shipping. After the triple check process, I finally got around to making notes on the wierdness's and questions I had, so here goes...

In the parts list on page 3 and the build instructions on page 8 R104 of the DSP Engine is described as a 50 ohm resistor (grn blk blk gold) and I hate to say it, but there is no such thing as a 50 ohm 5% resistor. EIA standard values are 47 and 51 ohms in that range. I did get a 51 ohm resistor in the kit (grn brn blk) and I caught this one on the first try. I am suprised and a little disappointed that no one else on the list caught that one.

J103 has me flummoxed... how are the pairs oriented? Up down (along the long dimension of the board) or left right (along the short dimension of the board). This is on the DSP Engine board, and this should be clarified on the documentation.

The description of the installation of VR100 has me trimming the excess twice, kinda hard to do, no? Just an innocent typo I am sure.

JP208 is missing on the parts placement diagram for the Analog board.

JP207 is silkscreened twice, as I am sure you know that, is JP207 mentioned twice on the schematics? Very often these parts placement diagrams are produced by the same PCB package the Schematic, PCB layout and all that is

done on.

After doing an empty hole check, I have a few questions...

What is X0 ? its near P202 and JP203
What is AUX+ ?
What is TP1 ?

Another note of interest, one should snap the antirotational tab off the front panel pot when installing it, otherwise you could end up with a crooked pot, or a good dent if you torque the mounting nut down too well, as I am apt to do.

Thats it for me this time around... I will post my adventures here when I get the #\$\$*&! shortages and the #\$\$*&! wallwart.

```
--
*****
** Ronald C. Barnes - KA1KJZ          Broadcast Engineer, WTX- TV      **
**                               ARRL CT Section Technical Specialist **
** internet: kalkjz@tigger.jvnc.net  Member, Society of Broadcast Engineers **
** packet : kalkjz@n4gaa.ct.usa.na   Member, IEEE                      **
**                               **
** Ask me about my TAPR DSP-93, it makes a good story                 **
*****
```

88. Re: [DSP-93:130] Some eratta and other complications I found

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sun, 15 Jan 1995 12:13:23 -0600
To: dsp-93@tapr.org
Message-ID: <ab3f13cd01021004ca04@[198.3.118.218]>
Rendered body type: text/plain

Ron,

Thanks for your comments. See responses below.

>Well, got most of my DSP-93 built, still waiting for those #\$\$*&! parts that
>have been shorted during the initial shipping. After the triple check
>process, I finally got around to making notes on the wierdness's and
>questions I had, so here goes...

Thanks for documenting your notes.

>In the parts list on page 3 and the build instructions on page 8 R104 of the
>DSP Engine is described as a 50 ohm resistor (grn blk blk gold) and I hate
>to say it, but there is no such thing as a 50 ohm 5% resistor. EIA standard
>values are 47 and 51 ohms in that range. I did get a 51 ohm resistor in the
>kit (grn brn blk) and I caught this one on the first try. I am suprisd and
>a little disappointed that no one else on the list caught that one.

Thanks for pointing this out. We'll note this in the next update.

>J103 has me flummoxed... how are the pairs oriented? Up down (along the
>long dimension of the board) or left right (along the short dimension of the
>board). This is on the DSP Engine board, and this should be clarified on
>the documentation.

J103 is square (2x2) and squares are invariant with respect to rotation by
90 degrees. Install either way.

>The description of the installation of VR100 has me trimming the excess
>twice, kinda hard to do, no? Just an innocent typo I am sure.

Thanks.

>JP208 is missing on the parts placement diagram for the Analog board.

This is covered in the Build Update:
* Page 17 (JP208 2 pin Male Header)
JP208 was left off the parts list and parts placement diagram. It is in the
install section. This is a two pin jumper located next to R215 on board 2.
If you are short a jumper and you did not install J100 then cut a pin off
this part and use it for J208. (Bob de N5BRG)

>JP207 is silkscreened twice, as I am sure you know that, is JP207 mentioned
>twice on the schematics? Very often these parts placement diagrams are

>produced by the same PCB package the Schematic, PCB layout and all that is
>done on.

This is covered in the Build Update:

* Page 17 JP207 and JP212

These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212

TAPR NOTE: This will be corrected in the next board production.

>After doing an empty hole check, I have a few questions...

>

> What is X0 ? its near P202 and JP203

> What is AUX+ ?

> What is TP1 ?

I get this info for you.

>Another note of interest, one should snap the antirotational tab off the

>front panel pot when installing it, otherwise you could end up with a

>crooked pot, or a good dent if you torque the mounting nut down too well, as

>I am apt to do.

Good idea.

>Thats it for me this time around... I will post my adventures here when I

>get the #\$\$*&! shortages and the #\$\$*&! wallwart.

Keep us informed.

Ron W5RKN

also:

w5rkn@amsat.org

89. Computer cable

From: Bob_Winingham@acd.org (Bob Winingham)

Date: 16 Jan 1995 01:00:25 GMT

To: dsp-93@tapr.org

Message-ID: <77397982.53523742@acd.org>

Rendered body type: text/plain

DSP to computer Hardware handshaking cable:

Ron, I see your point. If I had just connect the RS-232 cable direct to the computer like the instructions said instead of being wary, things would have worked the first time. <g>

As mentioned not all cables have the extra control lines.

If the uses doesn't see a signal coming from the computer

on pin 4 of the 25 pin RS-232 they will need a new cable. They also need to watch out for RS-232 switch boxes as they too don't

always route all pins.

Note to DSP-93 users that connect to their computer with a 25 Pin RS-232 Cable.

The Radio Shack 9 pin to 25 adapter called out in the manual seems to come in two flavors:

On one type the female mounting hardware will un-screws.

The other type has it pressed on and the adapter falls apart if you

try to remove them. It is better to remove the mounting hardware from the DSP 9-pin socket and just push on the adapter.

I get a tight friction fit without needing mounting screws.

The user could also use a 9 pin extension cable and place the adapter on the other end thus saving 1.5 inches behind the box.

Bob KC5EJK

90. FSK.ASM

From: Jeff Garrett <jeff@kcbbs.gen.nz>

Date: Mon, 16 Jan 1995 21:40:24 +1300 (NZDT)

To: dsp-93@tapr.org

Message-ID: <Pine.3.05.1.9501162124.A28251-8100000@kcbbs>

Rendered body type: text/plain

Hi
I am wanting to reassemble fsk.asm for a higher gain setting and it
doesn't appear on my distribution disks. Is it available and if so what is
the best way to obtain it (I don't have ftp facility).

73
Jeff ZL1BIV

91. fsk.asm

From: Mark L. Hammond <hammond@camel.campbell.edu>
Date: Mon, 16 Jan 1995 08:42:58 -0500
To: dsp-93@tapr.org
Message-ID: <9501161339.AA14240@camel.campbell.edu>
Rendered body type: text/plain

Hello Jeff,

The FSK.ASM source code was one of the very few files that was NOT
distributed with the kit. The hope is (and I am NOT quoting TAPR or
speaking on their behalf :-) that this will be one way that TAPR/AMSAT
can maintain rights to the DSP-93 for commercial licensing, so that more
monies can be generated to fund future projects such as this one.

For starters, I am surprised you need more gain from the software. Most of
us (beta testers) have found that with a gain setting of 4, there is quite
a range of setting for the resistor pots on the receive audio side.

In other words, if you need more gain, I think adjusting the pot R2xx (not
sure of the pot number on the production boards) is the way to go.

If you do want a different gain setting in software, I can assemble a new
fsk.obj file for you. Just let me know the port and the gain setting, and
I can make it for you. As far as getting you the file, how about if I
uuencode it and email it to you? That should work just peachy.....the .obj
files are not very big.

Let me know if you want a new version....I am still serving as "software
librarian" and will be glad to help you out!

>Hi
>I am wanting to reassemble fsk.asm for a higher gain setting and it
>doesn't appear on my distribution disks. Is it available and if so what is
>the best way to obtain it (I don't have ftp facility).
>
>73
>Jeff ZL1BIV

Mark L. Hammond, Ph. D. (KC4EBR)
hammond@camel.campbell.edu

Campbell University
Department of Biology
Buies Creek, NC 27506
1-919-893-1734 or
1-800-334-4111, ext. 1734

92. [DSP-93:119] Build Update 1/16/95

From: rparsons@bga.com (Ronald G. Parsons)
Date: Mon, 16 Jan 1995 11:30:18 -0600
To: dsp-93@tapr.org
Message-ID: <ab405ca7010210040d9b@[198.3.118.152]>
Rendered body type: text/plain

DSP-93 Build Suggestions
December '94 Production

Updated: 1/16/95

We will try to update this message as the build happens and post it so ever
so often.

You can get copies of all past messages distributed on the dsp-93@tapr.org
list by sending mail to 'listserv@tapr.org', subject of 'list', message of
'index dsp-93'. This message will request a listing of all files in the
dsp-93 mail archive. To then request a specific month, send mail again to
'listserv@tapr.org', Subject of 'request', message of 'request dsp-93
filename', where filename is the name of the file in the dsp-93 area you
want to request (i.e. nov.94).

January 16th, 1995 Update Section

* Pin 3 on DSP-93 TNC not at 5V

A pullup resistor was left off the DSP-93 Board 2 to pullup pin 3 on the TNC connector (between U113 and U114). A solution is to solder a resistor (about 10k ohms) on the bottom of Board 2 between pin 3 of the TNC connector and U113 pin 20 (+5V). Be careful not to short either lead to any uninsulated point on the bottom of the board.

* Power on and off caution

It is also important to note that the DSP-93 (as well as most other radio modems) may cause your transmitter to go into transmit mode briefly when the DSP-93 is powered on and/or powered off. This can occur even if the initializations lines referred to in the "Radio Port Configuration Notice" are properly configured. Take precautions so that your equipment will not be damaged if this should occur.

* Another solution to the Icom up/down tuning line

As mentioned on pages 14 and 33 of the Assembly Manual, you were given a work around for the Icom up/down tuning line by placing the resistors in the cable to an Icom radio. If you will need this tuning arrangement, another solution is to solder resistors R220 and R223 on to the bottom of Board 2. Solder one of the resistors between the square pad of R223 and U205 pin 6. Solder one of the resistors between the square pad of R220 and U205 pin 8. Be careful not to short either lead to any uninsulated point on the bottom of the board.

* R104 in parts and installation

>From ERRATA Sheet (dated 12/18/94)

In the parts list on page 3 and the build instructions on page 8, R104 is described as a 50 ohm resistor (green-black-black-gold). It should have been described as a 51 ohm resistor (green-brown-black-gold).

* Page 20 (volume control)

Page You may need to snap off or bend the antirotational tab of the front panel pot when installing it so that it fits flat against the front panel.

January 14th, 1995 Update Section

* Spacers used between boards

It has come to the attention of the project that not all the spacers are the same length. There is a difference of about 1mm in the two type of spacers. If the builder has these slightly shorter spacers, then when the two boards are stacked there will be a slight space between the top of the spacer and the bottom of the top board when the interboard connectors are placed fully into position. It is NOT suggested that the builder secure down the screws so as to place stress on the top board. The best solution will be on a case by case basis. If you notice a gap of between .5mm and 1mm between the top of the spacer and the bottom of the top board, then simply place a small washer in the gap. This is the simplest way to correct the problem. The other way is to just tighten the screws so that they are secure, but not placing stress on the top board. (Thanks to Vince KD7AI for catching this)

* PC and Mac serial hookup

Answers to questions regarding a problem about getting a computer to talk out the serial line to the dsp-93.

-- Are you sure you have all the necessary wires in your serial cable. If I remember correctly, you may be using a Mac. The cable requires RTS,CTS and not all serial cables carry this. (Ron, W5RKN)

-- check out the handshaking used by your terminal program. You should set it for NO handshaking whatsoever...this burns me from time to time when I switch terminal programs or operating systems. (Mark, KC4EBR)

January 11th, 1995 Update Section

* MAX692CPA Part

The first production run of DSP-93 were shipped with a MX692CPA, instead of the required MAX692ACPA. The 'A', turns out to be significant. The

solution for using this chip (692CPA) on the DSP-93 is simple:

Ground pin 8 (VBAT). Then, the unit will work fine with either of the two MAXIM chips (692CPA or 692ACPA). You will find a hole next to pin 8 of U116. This pad is connected to pin 8 on the circuit side (bottom) of the PC Board. Solder a short jumper wire from this pad to pin 3 of U116 (GROUND). Now you can use either device (692CPA or 692ACPA). This fix has been tested with both types of devices and it works fine. NO CUTS ARE REQUIRED ON THE BOARD.

* The following has been added to the build doc.

Be sure to read the following paragraphs carefully. You must configure your DSP-93 properly or you may cause your radio to go into a transmit mode after power up or reset. If your radio is placed in transmit, it may burn out a preamplifier or damage your radio. If you read and understand the following inThe RADIO IO ports must be configured to a determined radio port control state at power up by strapping certain lines on the DB25 "Interface Port" interfacing the TNC. The monitor code checks the logical state of four lines after a power up or reset. The logical state of these lines will establish the initial output condition of the lines which control your radio's push to talk line and the external frequency shifter. It is suggested that you configure these lines with jumpers to +5 or ground according to the requirements of your radio. Refer to your radio's manual for information about how these signals will affect the radio's operation. In other words, do you ground your radio's PTT input to key your radio or do you take it to plus five volts? After you have it wired, test it with your equipment to be sure things are working as you expect. Remember, with computers and so many things to connect properly it is easy to get something wrong and cause a problem so double check everything.

The jumpers to configure the four radio control ports can be placed on a 20 pin header. This header will then plug into the extra connector placed on the ribbon cable connecting the DB25 "Interface Port" and the 20 pin header on board two.

Refer to section "IO Port Configuration Setup" of your assembly manual, near the back (page 33 of First Printing), for more information.

January 10th, 1995 Update Section

* Good News! A source for 1.5amp transformers has been located and transformers should no longer be a problem. They will be shipped to everyone notifying the office that they require a replacement supply. Supplies are expected into the office on January 17th.

* Typo. page 15 col 1 para 6. Should be R217 not R127 and perhaps at end of line add U205 pin 14. (Ian, ZL1A0X)

* Page 15 col2 ... suggest that C214 be included in group below or maybe highlight it some way. I was caught out and placed a 0.1 instead of 1.0UF cap in position C214. (Ian, ZL1A0X)

* Page 20 col 2 re speaker wire. There is not a square PCB pad as mentioned in 2nd from bottom paragraph. (Ian, ZL1A0X)
NOTE: The square pad was suppose to be the hole next to the edge of the board.

* Page 21 RESET button. Should mention that it is soldered onto board 1. There is also a reset position in the same area on Board 2. (Ian, ZL1A0X)

* When installing the interboard connectors JP201, JP202, JP203, and JP205 you need to be careful. Extra care is needed when handling the boards after they have been installed. (Jeff, ZL1BIV)

P.S. Congrats to Jeff, ZL1BIV and Ian, ZL1A0X for the first units finished and working.

January 2nd, 1995 Update Section

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After

informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Schematics Changes: On page 3 of 3 Digital:Power Supply
C118 & C119 are drawn twice: C119 once as a by-pass caps 0.1 and again as a 4.7 uF filter cap. and C118 in the power supply filter and in the by-pass cap drawing.
Change C119 from a 4.7 uF to a 0.1. Remove the extra C119. Change the extra C118 to C123. (Bob de N5BRG)

* Schematics Changes: On page 3 of 3 Digital:Power Supply
C123 is not on the diagram. It's a by-pass for U116 and is 0.1 uF. Add this to your schematic. (Bob de N5BRG)

* Schematics Changes: On page 2 of 3 Digital reset and Clock:
C110 : The value is not given just the labeled CAP. The value of C110 is 0.1 uF. Correct your schematic. (Bob de N5BRG)

* Page 19

The LED flats are small and hard to see. It might be a good double check and to mention the SHORT lead (cathode) goes in the square hole. The bend is about where the marking crimp's are on the leads. (Bob Winingham KC5EJK)

LED leads are not always cut this way. We should mention this in case they are. Be sure to look at the flat of the package to double check. (Bob de N5BRG).

* Page 10/col 2

It has been suggested:

P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together. (Jim de K4GV0)

I have soldered a number of these connectors to boards by just placing the connector flat on the PC board and filling the three holes with solder. I used a 25W soldering iron. This method works. (Bob de N5BRG)

* R224 in parts and C207 on schematics

R224 was dropped in the production board, but was not removed from the parts list. This means you have an extra resistor for this part. It was removed from page 14 of the install. It is also shown on the schematics on page 1 of 5 along with a capacitor marked as C207. Both of these should be marked out in the schematic. They do not exist on the PC boards. The identifier C207 was used on the capacitor placed near U202 and it is connected to pins 1 and 2 of U202. This should be added to the schematic on page 3 of 5. C207 is a 22 pF capacitor. (Bob de N5BRG)

* Page 17 (JP208 2 pin Male Header)

JP208 was left off the parts list and parts placement diagram. It is in the install section. This is a two pin jumper located next to R215 on board 2. If you are short a jumper and you did not install J100 then cut a pin off this part and use it for J208. (Bob de N5BRG)

* You have a Mac and need to read the IBM disks.

I have a Macintosh and I had no problem using Apple File Exchange to read the two computer disks into my computer. In addition, PC Exchange version 2.0.2 on system 7.5 works fine. (Bob KC5EJK)

I used DOSMouter to read the files onto my Mac. (Greg, WD5IVD)

* Flux removal

There has been a long discussion on the best ways to handle flux removal. Refer to the dsp-93 mail list archives for the information.

December 30th, 1994 Update Section

* Be sure to check the bottom of the bags for parts that might be stuck.
The enclosure hardware was in it's own little plastic bag.

* Inter-board connectors

When installing, make sure that the 83B parts (the longer ones) are used on board 2. Refer to the supplied sheet on the errata, which shows the connectors in 1:1 size for comparison. The shorter ones on Board 1 (bottom) will be cut off, while the longer ones are used to connect it to board 2. The difference in lengths between 63B and 83B is about a 1/4 inch. These are almost impossible to remove when installed, so DOUBLE CHECK!
(** For International builders the component ref sheet is in the build doc **)

* Page 3/2nd col (Jim de K4GV0)

R105 should be (red-red-brown-gold). It is correct on install page.

R211 should be (red-black-orange-gold). It is correct on install page.

* Page 7, Socket Install

It has been suggested:

That header J100 be installed before the U114 and U115 sockets are installed, due to the tight fit. (Jim de K4GV0)

TAPR NOTE: This will be corrected in the next run of the board.

* Page 9 (C113 and C114)

It has been suggested:

If you are putting zig-zags in the leads of the 0.1 caps to make them fit the hole spacing watch out for C113 and C114 as there are small land-holes between and the solder might wick over if the cap leads are touching the board at that spot. (Bob KC5EJK)

TAPR NOTE: The via location will be corrected in the next run of the board.

* Page 15/col 1

It has been suggested:

The power jumper that need to be added to the +5 of Pin 14 and Pin 1 of the resistor strip it would have been better if I had put the jumper in and then soldered the pins. I could have placed a small wire into the pad holes or wrapped around the pins. (Bob KC5EJK)

TAPR NOTE: This will be corrected in the next run of the board.

* Page 15/16

My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16. (Bob KC5EJK)

* Page 17 JP207 and JP212

These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212

TAPR NOTE: This will be corrected in the next board production.

* Page 18 P203AC Jack

The directions say to solder in at position P100, it should be position P203. Typo.

* Page 18/col 2 Crystal

It has been suggested:

Somehow reading the Crystal instructions misses telling people with a crystal with short leads that they need to make three wires. Two for the bottom leads and one for the can lead. Someone might mount the crystal upright. I hope when the instructions said flat it was telling me (on its side). (Bob KC5EJK)

TAPR NOTE: Mounting it on its side is the best solution, in case you want to mount a later board on top of the 2nd board (i.e. TNC-95, ethernet, etc). Some of the Xtals shipped had long leads and some didn't.

* Power Plug Install on line from transformer

I would suggest using some heat shrink when attaching the new plug to the power adapter cable. The stranded wire is large so you may want to remove a few strands to fit the center connector tab. You might also want to use tape or heat shrink for strain relief. (Bob KC5EJK)

Ron W5RKN

also:

w5rkn@amsat.org

93. Is this up

From: rparsons@bga.com (Ronald G. Parsons)
Date: Mon, 16 Jan 1995 14:28:32 -0600
To: dsp-93@tapr.org
Message-ID: <ab40874c00021004129d@[198.3.118.153]>
Rendered body type: text/plain
Checking on reaction time.

Ron W5RKN

also:
w5rkn@amsat.org

94. Parts Arrived

From: Carol Byers <crlbyers@garlic.com>
Date: Mon, 16 Jan 1995 15:29:26 -0800 (PST)
To: hardware dsp-93 <dsp-93@tapr.org>
Message-ID: <Pine.A32.3.91.950116152749.21935A-100000@garlic.com>
Rendered body type: text/plain

The missing parts arrived this afternoon...all I need is the replacement xformer

Great job TAPR/AMSAT

95. Lost messages on TAPR mailing lists

From: lcz@datapoint.com (Lee Ziegenhals)
Date: Mon, 16 Jan 1995 18:46:39 -0600 (CST)
Message-ID: <m0rU24F-0000j1C@dptspd.sat.datapoint.com>
Rendered body type: text/plain

We apologize for any lost mail to this mailing list during the past 24 hours. We have been making changes to the software. Doing this while trying to keep my full-time employer happy prevented me from testing the changes sufficiently.

Lee, N5LYT

96. Re: [DSP-93:136] Is this up

From: Bob Stricklin <bstrick@tenet.edu>
Date: Mon, 16 Jan 1995 18:58:49 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501170058.SAA09884@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

I see you is this up message Ron.

Bob Stricklin, N5BRG

97. Re: [DSP-93:136] Is this up

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 16 Jan 1995 19:40:15 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501170140.TAA21054@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

The problem during the weekend was that some system in Az was looping every message back into the system...lucky that the listserv only sent the first duplicate out. What that meant was that it also send copies to the rejects we were sending back to it :-)

I think Lee has it all fixed now...and working on some other things.

Greg

According to Ronald G. Parsons:

>
> Checking on reaction time.
>
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>

98. Re: [DSP-93:137] Parts Arrived

From: "Jim Lynch" <k4gvo@atl1.america.net>
Date: Tue, 17 Jan 1995 05:27:02 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <199501171027.KAA12845@america.net>
Rendered body type: text/plain

>
> The missing parts arrived this afternoon...all I need is the replacement
> xformer
>
> Great job TAPR/AMSAT
>
>
>
I second that!

Jim Lynch Fayetteville, GA K4GV0
k4gvo@america.com 44.36.34.20, eventually

99. [DSP-93] TPRS.ASM (fwd)

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 17 Jan 1995 11:47:15 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Cc: hjk@dtro.e-technik.th-darmstadt.de
Message-ID: <199501171747.LAA03233@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi Dietmar, I am reposting your message to dsp-93, since I am letting the dsp93 development group handle all these now.

Cheers - Greg

According to H.-J. Knobloch:
>From hjk@dtro.e-technik.th-darmstadt.de Tue Jan 17 09:06:00 1995
Date: Tue, 17 Jan 95 15:58:46 +0100
From: "H.-J. Knobloch" <hjk@dtro.e-technik.th-darmstadt.de>
Message-Id: <9501171458-AA28356@mailhost.dtro.e-technik.th-darmstadt.de>
To: gjones@tenet.edu
Subject: [DSP-93] TPRS.ASM

From: Dietmar Grossmann DJ4RX @ DB0GE.#SAR.DEU.EURO
To: Greg Jones <gjones@tenet.edu>
Subject: [DSP-93] TPRS.ASM

While browsing through TPRS.ASM I found a small typing error:
GAIN .EQU GAIN1 ; was GAIN2 :line 066 95-01-17 DJ4RX

It is a pity that FSK.ASM is not available. Since there is plenty of memory left unused, I was thinking of augmenting the modem code by something which could look like a TNC...

Dietmar

100. Mine works too

From: dmedley@dconcepts.com
Date: Fri, 13 Jan 95 10:33:51 EST
To: dsp-93@tapr.org
Message-ID: <9501131033.D7798Hp@dconcepts.com>
Rendered body type: text/plain

Well I have got the monitor up and running. I am taking this machine with me to Australia on Thursday and if there are any Aussies reading this and would like to see it I will be in Sydney off and on until March 23. You can contact me at 327 6980 which is in Double Bay or leave a message on COMPUSERVE. I may not have access directly to INTERNET unless someone can give me some access details.
Dave KI6QE/VK2IMJ

101. Computer interface

From: dmedley@dconcepts.com
Date: Fri, 13 Jan 95 10:40:22 EST
To: dsp-93@tapr.org
Message-ID: <9501131040.D02831f@dconcepts.com>
Rendered body type: text/plain

When I first got my machine running (yellow light and all that) it locked up my computer. I remembered seeing comments re handshaking

and on checking my PROCOMM set up parameters I found it set for ANSI emulation with hardware flow control ON. I reset it to VT102 with all flow control OFF and the problem went away.
de Dave KI6QE

102. DEBUG.INC

From: mccannm@erie.gov (Michael J. McCann)
Date: Tue, 17 Jan 95 15:16:57 EST
To: dsp-93@tapr.org
Message-ID: <9501172016.AA11336@erie.gov>
Rendered body type: text/plain

Where is the DEBUG.INC file ? I can not find it on the disks that came with the kit.

Mike McCann, KB2FMG

103. Re: [DSP-93:145] DEBUG.INC

From: hammond@camel.campbell.edu (Mark L. Hammond)
Date: Tue, 17 Jan 1995 16:53:03 -40962758 (EST)
To: dsp-93@tapr.org
Message-ID: <9501172153.AA19086@camel.campbell.edu>
Rendered body type: text/plain

Mike,

You are the second to ask for this file. It will not be distributed in its original form. Rather, Bob is going to be posting a note soon as to most of the details of interest from this file.

So, sorry for the delay but it is forthcoming (in albeit a slightly reduced form....)

>
> Where is the DEBUG.INC file ? I can not find it on the disks that came
> with the kit.
>
> Mike McCann, KB2FMG
>
>
>
>

--
Mark L. Hammond, KC4EBR
hammond@camel.campbell.edu

Campbell University
Department of Biology
Buies Creek, NC 27506
1-919-893-1734 or
1-800-334-4111, ext. 1734

104. Re: [DSP-93:142] [DSP-93] TPRS.ASM (fwd)

From: Bob Stricklin <bstrick@tenet.edu>
Date: Tue, 17 Jan 1995 20:50:01 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501180250.UAA21714@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

> From: Dietmar Grossmann DJ4RX @ DB0GE.#SAR.DEU.EURO
>
> It is a pity that FSK.ASM is not available. Since there is plenty of memory
> left unused, I was thinking of augmenting the modem code by something which
> could look like a TNC...
>

Dietmar, I think the issue of getting TNC code intergrated into the DSP is not memory by DSP cpu cycles available. The total time available for all processing is set by the AIO sample rate.

You can make it do TNC HDLC type functions in the slower modem applications possibly. This would be a place to start. Others may have more comments on this.

Bob Stricklin, N5BRG

105. Drawing question

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 16 Jan 1995 18:05:26 GMT
To: dsp-93@tapr.org
Message-ID: <3033923549.58709869@acd.org>
Rendered body type: text/plain

I think I am going to go blind reading these small drawings.

DSP-93 Drawing questions:

ONE: AI0: Analog Interface [3 of 5] Drawing

Does the XMIT radio 2 and the XMIT radio 1 signal tie together under C204 or should that dot be removed.

It makes the Xmit radio 1 go to both in_5 and in_7 of U203 MAC358

TWO: Digital: AI0:Power Supply [5 of 5] Drawing

I did not get an AMAN to the dot short on the drawing that loops the right side of the fuse back to ground.

THREE:

What does RLSD stand for: Pin 38 of ST16550 SERIAL I/O chip?
I was expecting a DCD around there somewhere.

73
Bob KC5EJK

This may be a repeat posting. I send 4 messages to the list Sunday and I did not get a copy of this one. Apology if a duplicate.

106. Re: Some eratta

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 16 Jan 1995 18:19:35 GMT
To: dsp-93@tapr.org
Message-ID: <1114111.58710099@acd.org>
Rendered body type: text/plain

Ronald C. Barnes - KA1KJZ asked about:

>In the parts list on page 3 and the build instructions on page 8 R104 of the
>DSP Engine is described as a 50 ohm resistor (grn blk blk gold) and I hate
>to say it, but there is no such thing as a 50 ohm 5% resistor. EIA standard
>values are 47 and 51 ohms in that range. I did get a 51 ohm resistor in the
>kit (grn brn blk) and I caught this one on the first try. I am suprised and
>a little disappointed that no one else on the list caught that one.

I guess I can remove the 2,700 Ohm I put in parallel with R104 to get 50 ohms.

Just kidding. :-)

When I got my kit there was a buff colored bond paper ERRATA sheet that listed the missing parts and Notes on building the kit without these parts.
The first line under the large ERRATA said:

A 51 ohm resistor (green-brown-black) is supplied as R104

>J103 has me flummoxed... how are the pairs oriented? Up down (along the
>long dimension of the board) or left right (along the short dimension of the
>board). This is on the DSP Engine board, and this should be clarified on
>the documentation.

I looked under the board and saw that two of the pads were joined and common and put one jumper plug into each. I took the numbers (1,2) on the board to be jumper 1 and jumper 2. The drawing did make it clear that this was correct. I agree it caused me to stop and think. 1 and 2 could be pin 1 and pin 2 of the same jumper. I then tried a test jumper cover and it worked both ways so it did not matter. This is the Watch dog timer WDT that Bob talked about and is not used yet. The idea is if the software were to crash or lock up the DOG could be used to re-boot the system.

>The description of the installation of VR100 has me trimming the excess
>twice, kinda hard to do, no? Just an innocent typo I am sure.

Page 11 of 33 trimming the excess is listed twice:
That is on my list also to report to the manual writers .

Page 29 of 33 middle of 4 paragraph column 1 that says
"this program could to be modified to activate the A/D"
is also repeated at bottom of page under COMMENTS:
need to remove the "to".

> What is X0 ? its near P202 and JP203
> What is AUX+ ?
> What is TP1 ?

I did not see an answer posted for you today but
I found some of these on the drawings:

AUX+ looks like it could be the AUX IN + pin 24 of U209 ??
X0 jumpers goes to U209 pin 7 on one side and ground on the other.
TP1 I also don't see TP1 and I have not traced it out yet.

I hope Bob Strickland is in town can tell us what he had in mind for these.

Bob KC5EJK

107. When DSP-93 send out me ?

From: 000000 <UQB54422@pcvan.or.jp>
Date: Wed, 18 Jan 95 21:58:50 +0900
To: dsp-93@tapr.org
Message-ID: <950118215845.17872@pcvan.or.jp>
Rendered body type: text/plain

I have ordered DSP-93 kit and I have paid price on November 94,
but not arrive DSP-93 kit.
When DSP-93 send out me ?
I have paid full kits money by the VISA.
I'm waiting the DSP-93 kit for long long time.
I need more details information.

Masaji Tamagawa, JH1A0Y
UQB54422@pcvan.or.jp

-eof-

108. [DSP-93:119] Software and Doc Update 1/18/95

From: rparsons@bga.com (Ronald G. Parsons)
Date: Wed, 18 Jan 1995 09:00:01 -0600
To: dsp-93@tapr.org
Message-ID: <ab42d923020210049737@[204.96.0.143]>
Rendered body type: text/plain

DSP-93 Software and Doc Update
December '94 Production

Updated: 1/18/95

We will try to update this message and post it so ever so often.

You can get copies of all past messages distributed on the dsp-93@tapr.org
list by sending mail to 'listserv@tapr.org', subject of 'list', message of
'index dsp-93'. This message will request a listing of all files in the
dsp-93 mail archive. To then request a specific month, send mail again to
'listserv@tapr.org', Subject of 'request', message of 'request dsp-93
filename', where filename is the name of the file in the dsp-93 area you
want to request (i.e. nov.94).

January 18th, 1995 Update Section

* Error in TPRS.ASM and PKT.ASM
There is an error near line 67 of TPRS.ASM and PKT.ASM.

```
#ifdef G1
GAIN .EQU GAIN2
```

#endif

should be:

```
#ifdef    G1
GAIN      .EQU      GAIN1
#endif
```

* What are those undocumented holes for?

What is X0 ? (near P202 and JP203)

X0 is a buffered version of the input signal with a full +/- 5 volt swing.
See page 3 of 5 for the X0 location on the schematic. This signal is for
checking your input signal or a monitor.

What is AUX+ ?

Auxilliary audio input for AIO chip. Requires custom code if a user should
ever want to use it. Placed on the board for users that may want to take
advantage of this input. See TI TLC32044 data sheet for more details if you
are interested.

What is TP1 ?

TP1 is the primary audio input signal to the AIO chip.

X0 and TP1 make it easier to look at your signals if you have problems.

Ron W5RKN

also:

w5rkn@amsat.org

109. Re: [DSP-93:148] Drawing question

From: rparsons@bga.com (Ronald G. Parsons)
Date: Wed, 18 Jan 1995 09:00:09 -0600
To: dsp-93@tapr.org
Message-ID: <ab42db390402100414b4@[204.96.0.143]>
Rendered body type: text/plain

>I think I am going to go blind reading these small drawings.

You should have been on the beta test. These look like "large print for the
sight impaired" in comparison.

>DSP-93 Drawing questions:

>

>ONE: AIO: Analog Interface [3 of 5] Drawing

>-----

>Does the XMIT radio 2 and the XMIT radio 1 signal tie

>together under C204 or should that dot be removed.

>

>It makes the Xmit radio 1 go to both in_5 and in_7 of

>U203 MAC358

That is correct. There is only one transmit audio signal and it serves port
radio ports.

>TWO: Digital: AIO:Power Supply [5 of 5] Drawing

>-----

>I did not get an AMAN to the dot short on the drawing

>that loops the right side of the fuse back to ground.

I don't understand the question, but there appears to be an extra dot just
below and to the right of the fuse. Looks like a short to me :-)

>THREE:

>-----

>What does RLSD stand for: Pin 38 of ST16550 SERIAL I/O chip?

>I was expecting a DCD around there somewhere.

I'll pass on this one.

>73

>Bob KC5EJK

Ron W5RKN

also:
w5rkn@amsat.org

110. Re: [DSP-93:152] Re: Drawing question

From: Mark L. Hammond <hammond@camel.campbell.edu>
Date: Wed, 18 Jan 1995 11:22:35 -0500
To: dsp-93@tapr.org
Message-ID: <9501181619.AA21171@camel.campbell.edu>
Rendered body type: text/plain

I got a REALLY good chuckle out of that one!!!

>>I think I am going to go blind reading these small drawings.
>
>You should have been on the beta test. These look like "large print for the
>sight impaired" in comparison.
>
>
>
>>73
>>Bob KC5EJK
>
>Ron W5RKN
>

Mark L. Hammond, Ph. D. (KC4EBR)
hammond@camel.campbell.edu

Campbell University
Department of Biology
Buies Creek, NC 27506
1-919-893-1734 or
1-800-334-4111, ext. 1734

111. TNC Interface

From: dmedley@dconcepts.com
Date: Wed, 18 Jan 95 09:03:29 EST
To: DSP-93@tapr.org
Message-ID: <9501180903.D7520DI@dconcepts.com>
Rendered body type: text/plain

I have now got through all the tests and am wondering about the TNC interface. I intend to use a PacComm micropower 2 TNC which has a "standard" TAPR modem disconnect. Is there anybody out there using this TNC? Do I configure the cable exactly as shown on page 32 of 33? I am first trying to get 1200 baud packet going as it seems the simplest for demo purposes. As this is going to be a portable operation the radio will be a Yaesu ft-470 which is an HT with the PTT mixed up with the mic lead. I have had it working OK on regular packet so probably the same strategy with the resistor and capacitor may work. Any comments or suggestions?
Dave KI6QE/VK2IMJ

112. Re: [DSP-93:150] When DSP-93 send out me ?

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 18 Jan 1995 11:31:53 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501181731.LAA25569@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi Masaji,

I replied to your personal message a week or so ago. Maybe you didn't get it?

Several of the International orderes were returned to the office last week for no apparent reason. The people we deal with at our local post office could not determine why they were returned either. They checked back into it and all the paperwork we had filled out was correct. This was only 5 units out of 20+ that were mailed overseas. Guess that batch of 5 got someone new or something.

This was the first time we had this happen. We shipped over 150+ international packages last year in the same manner without a problem.

They have all been sent back out and I have high hopes that they will be delivered this time. All the international orders that were shipped were complete, so you should be ready to go.

Typically the US Postal Service does a good job, but ever so often we do something they don't see all the time.

Hope that helps - Greg, WD5IVD

According to =?ISO-2022-JP?B?GyRCNkxAbiEhQDU8IRsoQg==?=:

>
>
> I have ordered DSP-93 kit and I have paid price on November 94,
> but not arrive DSP-93 kit.
> When DSP-93 send out me ?
> I have paid full kits money by the VISA.
> I'm waiting the DSP-93 kit for long long time.
> I need more details information.
>
> Masaji Tamagawa, JH1AOY
> UQB54422@pcvan.or.jp
>
> -eof-
>

113. Re: [DSP-93:154] TNC Interface

From: rparsons@bga.com (Ronald G. Parsons)
Date: Wed, 18 Jan 1995 17:12:27 -0600
To: dsp-93@tapr.org
Message-ID: <ab434f6e000210046259@[198.3.117.71]>
Rendered body type: text/plain

>I have now got through all the tests and am wondering about the TNC
>interface. I intend to use a PacComm micropower 2 TNC which has a
>"standard" TAPR modem disconnect. Is there anybody out there using
>this TNC? Do I configure the cable exactly as shown on page 32 of
>33?

I did not use that TNC but I used an MFJ 1270B which has a "standard" TAPR modem disconnect. I wired up the cable from the DB-25 on the back of the DSP-93 to the disconnect __exactly__ as described in the manual. Worked the first time.

>I am first trying to get 1200 baud packet going as it seems the
>simplest for demo purposes. As this is going to be a portable operation
>the radio will be a Yaesu ft-470 which is an HT with the PTT mixed up
>with the mic lead. I have had it working OK on regular packet so
>probably the same strategy with the resistor and capacitor may work.
>Any comments or suggestions?
>Dave KI6QE/VK2IMJ

I'd suggest trying what your experience says to do, the if there are problems, completely document your problems and we'll do from there.

Hope this helps.

Ron W5RKN

also:
w5rkn@amsat.org

114. Re: [DSP-93:154] TNC Interface

From: Bob Stricklin <bstrick@tenet.edu>
Date: Wed, 18 Jan 1995 18:53:02 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501190053.SAA18746@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain

According to dmedley@dconcepts.com:

>
Dave, I do not know of anybody with this TNC but if it is TAPR compatible then you should be OK. I would stick with the interface just like it is shown in the assembly manual first. If you have to take some type of connector off your TNC header be sure to replace any shorting bars that are removed and not used in the TNC to DSP interface. I'll bet you have it working before you see this message.

Working at the normal 1200 baud is best because you can normally find lots of local signals to test with.

Bob Stricklin

115. Re: [DSP-93:152] Re: Drawing question

From: Bob Stricklin <bstrick@tenet.edu>
Date: Wed, 18 Jan 1995 19:02:32 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501190102.TAA19723@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain

According to Ronald G. Parsons:

>
> >I think I am going to go blind reading these small drawings.
>
> You should have been on the beta test. These look like "large print for the
> sight impaired" in comparison.
>
Get use to it, they are not going to get any better.

>
> >DSP-93 Drawing questions:
> >
> >ONE: AIO: Analog Interface [3 of 5] Drawing
> >-----
> >Does the XMIT radio 2 and the XMIT radio 1 signal tie
> >together under C204 or should that dot be removed.
> >
> >It makes the Xmit radio 1 go to both in_5 and in_7 of
> >U203 MAC358
>
> That is correct. There is only one transmit audio signal and it serves port
> radio ports.
>

The transmit audio serves both radio ports. This audio originates at the AIO chip. For that matter there is really only one audio input to the AIO.

>
> >TWO: Digital: AIO:Power Supply [5 of 5] Drawing
> >-----
> >I did not get an AMAN to the dot short on the drawing
> >that loops the right side of the fuse back to ground.
>
> I don't understand the question, but there appears to be an extra dot just
> below and to the right of the fuse. Looks like a short to me :-)
>
Remove the lower dot. The board is not shorted. The schematic is wrong.

> >THREE:
> >-----
> >What does RLSD stand for: Pin 38 of ST16550 SERIAL I/O chip?
> >I was expecting a DCD around there somewhere.
>
Pin 38 is DCD. RLSD is Starteck's designation and I can not put my hands on their data sheet to tell you what the acronym stands for.

Bob Stricklin, N5BRG

116. HDLC with DSP

From: "Jarkko Vuori" <MIMIC@jeeves.hut.fi>
Date: Thu, 19 Jan 1995 09:49:44 EET-2DST
To: dsp-93@tapr.org
Message-ID: <25DF9B166F@jeeves.hut.fi>
Rendered body type: text/plain

> From: Dietmar Grossmann DJ4RX @ DB0GE.#SAR.DEU.EURO
>
> It is a pity that FSK.ASM is not available. Since there is plenty of memory
> left unused, I was thinking of augmenting the modem code by something which
> could look like a TNC...
>

Dietmar, I think the issue of getting TNC code intergrated into the DSP is not memory by DSP cpu cycles available. The total time available for all processing is set by the AIO sample rate.

You can make it do TNC HDLC type functions in the slower modem applications possibly. This would be a place to start. Others may have more comments on this.

Bob Stricklin, N5BRG

Yes indeed that can be done. I have done it with the Motorola 27 MHz DSP56001 processor. I have 9600 bit/s G3RUH compatible DSP-modem and low-level HDLC handling running on the same DSP-chip in full-duplex mode with no problem.

In case you are interested look at jeeves.hut.fi, directory /alefnul1 for the source code and full documentation.

Jarkko Vuori, OH2LNS

Helsinki University of Technology
Lab. of Signal Processing and Computer Technology

117. Re: [DSP-93:159] HDLC with DSP

From: Bob Stricklin <bstrick@tenet.edu>
Date: Thu, 19 Jan 1995 18:24:11 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501200024.SAA00816@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

OK Jarkko, thanks for your input and I will have a look at the code you referenced.

73,

Bob Stricklin, N5BRG

118. Re: [DSP-93:158] Re: Drawing question

From: burgedm@ott.hookup.net
Date: Thu, 19 Jan 95 19:35:37 -0500
To: dsp-93@tapr.org
Message-ID: <9501200337.AA0024@burgedm.ott.hookup.net>
Rendered body type: text/plain

RLSD stands for Received Line Signal Detect. Its an "old" definition.

//-----
// Dave Burgess @ hookup.net
// OR
// David M. Burgess @ tc.gc.ca

VE3NNW

119. DEBUG DOCS

From: Bob Stricklin <bstrick@tenet.edu>
Date: Thu, 19 Jan 1995 20:23:22 -0600 (CST)
To: DSP-93@tapr.org
Message-ID: <199501200223.UAA05887@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain

Here is the promised information on DEBUG.

Bob Stricklin, N5BRG

DEBUG DOCUMENTATION:

The monitor ROM includes a debug routine developed by Tom McDermott, N5EG. This routine can be called as a development aid when you are generating new dsp code are if you are just studying existing code. To use the routine include the MONITOR.INC file at the beginning of a program you are assembling with the following statement:

```
#include "MONITOR.INC"
```

The MONITOR.INC file has three key statements which are used by a call to the debug routine. The statements are:

```
DEBUG .EQU 0400h ; Start of N5EG Debug Routine
```

This establishes the label DEBUG in your program. With this in place you can

issue a CALL DEBUG in your program to use the DEBUG routines.

```
DEBUGPC      .EQU 007Eh      ; Pass Counter used by CALL DEBUG
```

This statement establishes a memory pointer. DEBUGPC should be referred to as the passcount/mode value. DEBUG assumes this memory pointer will be located in page eight (8). You must store a value at this memory location before calling debug. The value tells debug how you want it to work. Here are the possible values to store:

```
= 0          : causes the debug to trap always.
= n          : value gets decremented by one each call, it stops
               decrementing at zero and causes debug trap.
= 0FFFFh    : causes the debug to trap always, then waits for
               keyboard input (any key) to continue.
```

```
DEBUGML      .EQU 007Fh      ; Starting data memory location used by CALL
DEBUG
```

This statement also establishes a memory pointer. DEBUG assumes this memory pointer will be located in page eight (8) also. The pointer is for the first of eight memory locations which will be sent to the serial port. This will be handy if you want to watch some of your memory variables change as your program executes.

Debug uses the AR7 register as holding location for the current memory stack pointer. The monitor places a value of 0AFFh in this register for the beginning of the stack location. The stack will be utilized by moving down towards 0h. The debug routine on uses a few of the memory stack locations, about 25, when it is called. Since AR7 is used to hold the location of stack you can not use it in your program if you intend to call debug.

You can see an example illustrating the assembly code used to call debug by reviewing the MON_TST.ASM routine.

Here is an example of the output from that routine:

```
PC=1018   A=00000060 AR= 2000 0EFC FFFF 101A FFFF FFFF FFFF 0AE8
           P=00000000 T=0000 ST0=EE08 ST1=17E0
0060:    0000 0000 0000 0000 0000 33E0 0E08 37E0
```

On the first line you have the program counter, accumulator, and eight AR registers. On the second line you see the P, T, ST0 and ST1 registers. On the third line you see the starting target memory location then the values sorted in eight memory locations starting with the target and including a total of eight locations. All of this will be lined up a little better in a later version of the monitor.

END OF DOCUMENTATION:

120. Re: [DSP-93:161] Re: Drawing question

```
From: Roy Welch <rdw@crl.com>
Date: Thu, 19 Jan 1995 20:50:34 -0800 (PST)
To: dsp-93@tapr.org
Cc: dsp-93@tapr.org
Message-ID: <Pine.SUN.3.91.950119204930.7552A-100000@crl10.crl.com>
Rendered body type: text/plain
```

On Thu, 19 Jan 1995 burgedm@ott.hookup.net wrote:

```
> RLSD stands for Received Line Signal Detect. Its an "old" definition.
>
>
> //-----
> // Dave Burgess @ hookup.net
> // OR
> // David M. Burgess @ tc.gc.ca
>
> VE3NNW
>
```

Yes, in the new Startech data book they show this pin as CD for Carrier Detect I suppose.

73, Roy

121. Re: [DSP-93:162] DEBUG DOCS

From: creek!hammond@camel.campbell.edu (Mark L. Hammond)
Date: Fri, 20 Jan 1995 11:55:55 +0000 (GMT)
To: camel!tapr.org!dsp-93
Message-ID: <m0rVHwa-00006AC@creek.uucp>
Rendered body type: text/plain

Bob,

Thanks for the debug info. I will add this documentation to the existing MONITOR.DOC file so it is present for the next diskette release.

--
Mark L. Hammond [KC4EBR]

122. Help

From: DEET@delphi.com
Date: Fri, 20 Jan 1995 22:45:06 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <01HM33YEDFEG8XG4VB@delphi.com>
Rendered body type: text/plain

Maybe someone can guide me in the right direction. I have both boards finished and run through all the test with no problems. I tried to hook it up to packet for testing before I tried it on the sats and I get nothing on the screen. The dcd flashes on the tnc and led 3 flashes but the computer just sets and looks at me. I traced the audio to the a/d chip so I know its getting that far. Now I stuck! If anyone has any ideas please let me know.
Dee Turner, N2MNC
deet@delphi.com

123. Re: [DSP-93:165] Help

From: Roy Welch <rdw@crl.com>
Date: Fri, 20 Jan 1995 20:34:49 -0800 (PST)
To: dsp-93@tapr.org
Cc: dsp-93@tapr.org
Message-ID: <Pine.SUN.3.91.950120203220.13486A-100000@crl.crl.com>
Rendered body type: text/plain

On Fri, 20 Jan 1995 DEET@delphi.com wrote:

> Maybe someone can guide me in the right direction. I have both boards finished
> and run through all the test with no problems. I tried to hook it up to packet
> for testing before I tried it on the sats and I get nothing on the screen.
> The dcd flashes on the tnc and led 3 flashes but the computer just sets and
> looks at me. I traced the audio to the a/d chip so I know its getting that
> far. Now I stuck! If anyone has any ideas please let me know.
> Dee Turner, N2MNC
> deet@delphi.com

In addition to having the TNC serial port set for the right speed, don't forget to set the radio data speed on the TNC also. The modem doesn't set the TNC radio speed. This is easy to forget, believe me.

73, Roy

124. My DSP-93 arrived today.

From: 〇〇〇〇〇 <UQB54422@pcvan.or.jp>
Date: Sat, 21 Jan 95 20:04:03 +0900
To: DSP-93@TAPR.ORG
Message-ID: <950121200358.2523@pcvan.or.jp>
Rendered body type: text/plain

My DSP-93 arrived today.
It sent out 17 January 1995.
I will make it soon.
Regards

Masaji Tamagawa JH1AOY, UQB54422@pcvan.or.jp

125. Re: [DSP-93:165] Help

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sat, 21 Jan 1995 08:33:46 -0600
To: dsp-93@tapr.org
Message-ID: <ab46cab500021004ef79@[198.3.117.65]>
Rendered body type: text/plain

>Maybe someone can guild me in the right direction. I have both boards finished
>and run through all the test with no problems. I tried to hook it up to packet
> for testing before I tried it on the sats and I get nothing on the screen.
>The dcd flashes on the tnc and led 3 flashes but the computer just sets and
>looks at me. I traced the audio to the a/d chip so I know its getting that
>far. Now I stuck! If anyone has any ideas please let me know.
>Dee Turner, N2MNC
>deet@delphi.com

Just a few things to check.

Make sure the terminal program is talking to the TNC. It's easy to forget
to attach it to the TNC after loading the program to the DSP-93.

Are you sure all the cabling between the DSP and the TNC is correct?

As Roy said, is the TNC terminal AND data (radio) baud rates set right?

If you turn MONITOR on on the TNC, do you see anything?

What TNC are you using?

Ron W5RKN

also:
w5rkn@amsat.org

126. (no subject)

From: uxgw@pcvan.or.jp
Date: Sat, 21 Jan 95 23:51:01 +0900
Message-ID: <9501211451.AA07468@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain
[Empty message body]

127. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 00:05:01 +0900
Message-ID: <9501211505.AA07689@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain
[Empty message body]

128. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 00:22:26 +0900
Message-ID: <9501211522.AA07850@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain
[Empty message body]

129. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 00:24:36 +0900
Message-ID: <9501211524.AA07878@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain
[Empty message body]

130. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 00:38:20 +0900
Message-ID: <9501211538.AA07995@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain
[Empty message body]

131. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 00:42:00 +0900
Message-ID: <9501211542.AA08033@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain
[Empty message body]

132. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 00:47:10 +0900
Message-ID: <9501211547.AA08098@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain
[Empty message body]

133. Setting up the DSP-93

From: Antonio Fernandez <100341.640@compuserve.com>
Date: 21 Jan 95 10:50:37 EST
To: DSP-93 mail list <dsp-93@tapr.org>
Message-ID: <950121155036_100341.640_BHA72-1@CompuServe.COM>
Rendered body type: text/plain

Hello all,

With your help and support during the assembly the DSP-93 is up and running now, thank you.

Now I'm doing the fine tuning and have some doubts:

R215 in the schematics is 1K, I think should be 25K as the one provided in the kit.

R216 in the schematics is 50K, should be also 25K as above.

To set the FSK modem I'm following the instructions provided in the docs (FSK.DOC).

It says:

"to set the modem up, tune in K0-23, good and strong... Adjust R214 for about 1 V p-p on pin 26 of the TLC32044"

Looking to the schematics I understand that the pot I should adjust is R215 (Radio 1)

or R216 (Radio 2) for RX level and R214/R213 for TX deviation, am I right?

BTW, I do receive the 9600 bps microsats fine. The performance is slightly poorer than the G3RUH and TAPR 9600 bps modems, but I think that it is due to lack of fine tuning -I do not have a scope- and have not tried yet the ISI modems.

Best 73 de Toni, ea4le

134. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 01:07:57 +0900
Message-ID: <9501211607.AA08374@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

135. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 01:25:09 +0900
Message-ID: <9501211625.AA08593@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

136. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 01:26:50 +0900
Message-ID: <9501211626.AA08606@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

137. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 01:31:42 +0900
Message-ID: <9501211631.AA08679@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

138. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 01:40:21 +0900
Message-ID: <9501211640.AA08799@mhs_gw.pcvan.or.jp>

Rendered body type: text/plain

[Empty message body]

139. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 02:16:06 +0900
Message-ID: <9501211716.AA09351@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

140. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 02:55:10 +0900
Message-ID: <9501211755.AA09824@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

141. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 02:56:19 +0900
Message-ID: <9501211756.AA09843@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

142. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 02:56:54 +0900
Message-ID: <9501211756.AA09848@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

143. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 02:58:00 +0900
Message-ID: <9501211758.AA09853@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

144. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 03:02:07 +0900
Message-ID: <9501211802.AA09953@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

145. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 03:06:16 +0900
Message-ID: <9501211806.AA10052@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

146. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 03:10:11 +0900
Message-ID: <9501211810.AA10133@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

147. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 03:11:43 +0900
Message-ID: <9501211811.AA10178@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain

[Empty message body]

148. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 03:13:54 +0900
Message-ID: <9501211813.AA10228@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain
[Empty message body]

149. (no subject)

From: uxgw@pcvan.or.jp
Date: Sun, 22 Jan 95 03:24:54 +0900
Message-ID: <9501211824.AA10472@mhs_gw.pcvan.or.jp>
Rendered body type: text/plain
[Empty message body]

150. Re: [DSP-93:167] My DSP-93 arrived today.

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 21 Jan 1995 13:44:55 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501211944.NAA07819@Alice-Thurman.tenet.edu>
Rendered body type: text/plain
Great! Sorry about the US Postal System mess-up. Glad to know that out International Shipments get there quickly.
Cheers - Greg
According to =?ISO-2022-JP?B?GyRCNkxAbiEhQDU8IRsoQg==?=:
>
>
> My DSP-93 arrived today.
> It sent out 17 January 1995.
> I will make it soon.
> Regards
>
> Masaji Tamagawa JH1A0Y, UQB54422@pcvan.or.jp
>
>

151. Re: [DSP-93:179]

From: Greg Jones <gjones@tenet.edu>
Date: Sat, 21 Jan 1995 14:22:19 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501212022.OAA11050@Alice-Thurman.tenet.edu>
Rendered body type: text/plain
Just to let you know, Lee (TAPR list admin) is working on what is causing this....and we should be flitering them out shortly.
Sorry about this....if you are generating this, please stop :-)
Greg
According to uxgw@pcvan.or.jp:
>
>

152. Thanks for the help! Now,

From: DEET@delphi.com
Date: Sat, 21 Jan 1995 16:36:58 -0500 (EST)
To: dsp-93@tapr.org
Message-ID: <01HM45EBDM4I8YJW8Z@delphi.com>
Rendered body type: text/plain
Ron, Thanks for the nudge. For some reason I was thinking that I should see the data from the serial port on the modem. I have the modem working with my DSRI DPK-2 for the 9600 bd sats. Now I have to get it working with the MFJ 1278. So far no luck. Thats the one I had the MFJ 9600 board installed. Any ideas on getting it working with the dsp-93?
Thanks again. Dee, N2MNC
deet@delphi.com

153. Re: [DSP-93:176] Setting up the DSP-93

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sat, 21 Jan 1995 15:36:50 -0600
To: dsp-93@tapr.org
Message-ID: <ab472c3c00021004d993@[204.96.0.105]>
Rendered body type: text/plain

>Hello all,
>
>With your help and support during the assembly the DSP-93 is up and
>running now,
>thank you.

Good to hear that.

>Now I'm doing the fine tuning and have some doubts:
>
>R215 in the schematics is 1K, I think should be 25K as the one provided in the
>kit.
>R216 in the schematics is 50K, should be also 25K as above.

You are correct on both items.

>To set the FSK modem I'm following the instructions provided in the docs
>(FSK.DOC).
>It says:
>"to set the modem up, tune in K0-23, good and strong... Adjust R214 for about
>1 V p-p on pin 26 of the TLC32044"
>
>Looking to the schematics I understand that the pot I should adjust is R215
(Radio 1)
or R216 (Radio 2) for RX level and R214/R213 for TX deviation, am I right?
>
>BTW, I do receive the 9600 bps microsats fine. The performance is slightly
>poorer than
>the G3RUH and TAPR 9600 bps modems, but I think that it is due to lack of fine
>tuning -I do not have a scope- and have not tried yet the ISI modems.

Again you are correct. When you get a scope on it, don't overdrive the input.
About 1 V p-p on pin 26 of the TLC32044 is plenty.

>Best 73 de Toni, ea4le

Ron W5RKN

also:
w5rkn@amsat.org

154. Re: [DSP-93:195] Thanks for the help! Now,

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sat, 21 Jan 1995 16:15:04 -0600
To: dsp-93@tapr.org
Message-ID: <ab473695010210044823@[204.96.0.163]>
Rendered body type: text/plain

>Ron, Thanks for the nudge. For some reason I was thinking that I should see
>the data from the serial port on the modem. I have the modem working with my
>DSRI DPK-2 for the 9600 bd sats. Now I have to get it working with the MFJ
>1278. So far no luck. Thats the one I had the MFJ 9600 board installed. Any
>ideas on getting it working with the dsp-93?
>Thanks again. Dee, N2MNC
>deet@delphi.com

I am using mine with an MFJ-1270B and just wired up the DSP-93 to TAPR
disconnect header as described in the build intructions.

Don't forget to make sure the jumpers on the disconnect header are there.
Pins 5-6-10-9, 11-12, 13-14.

My MFJ board also has 3-4 connected on the PCB.

I also had to cut a trace on the MFJ PCB between 19-20.

Ron W5RKN

also:
w5rkn@amsat.org

155. Re: [DSP-93:167] My DSP-93 arrived today.

From: Bob Stricklin <bstrick@tenet.edu>
Date: Sat, 21 Jan 1995 16:17:40 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501212217.QAA10043@Joyce-Perkins.tenet.edu>

Rendered body type: text/plain

Glad to hear you got your kit. Looking forward to hearing about your progress.

Bob Stricklin, N5BRG

156. No life from the output(s)

From: kalkjz@tigger.jvnc.net (Ron Barnes)
Date: Sun, 22 Jan 1995 00:22:37 -0500
To: dsp-93@tapr.org
Message-ID: <199501220524.AA27818@tigger.jvnc.net>
Rendered body type: text/plain

Well, got it all up and running, but I have an interesting problem

When running testramp or testbuzz (downloaded versions) I get no output.

I have traced it back to the DX pin of both the DAC and the interboard connection and there are no signs of life. Any clues? (Solder connections look good)

--

** Ronald C. Barnes - KA1KJZ Broadcast Engineer, WTXN-TV **
** ARRL CT Section Technical Specialist **
** internet: kalkjz@tigger.jvnc.net Member, Society of Broadcast Engineers **
** packet : kalkjz@n4gaa.ct.usa.na Member, IEEE **
** **
** Ask me about my TAPR DSP-93, it makes a good story **

157. Terrestrial 9600Bd

From: Jeff Garrett <jeff@kcbbs.gen.nz>
Date: Sun, 22 Jan 1995 19:41:33 +1300 (NZDT)
To: dsp-93@tapr.org
Message-ID: <Pine.3.05.1.9501221933.A21803-a100000@kcbbs>
Rendered body type: text/plain

Hi
I am having a problem with running 9600bd packet terrestrially. The local BBS runs half duplex and the DSP-93 will only decode the packets when set to full duplex on the TNC (MFJ-1270 TAPR 1.1.7B eeprom). This makes operation a little slow....
Is there a work around for this? or will I require a different version of FSKP1,P2.
My unit is performing great with all the other tasks available after a problem with a high resistance in the feed from the discriminator and the DSP-93 loading this down to an unusable signal level.

Any help with this problem would be appreciated.
73
Jeff Garrett ZL1BIV

158. Transformers

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 22 Jan 1995 02:17:53 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501220817.CAA18144@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Forget to mention this...

Transformers were shipped UPS ground on Tue and Wed of this last week to all those that had contacted the office regarding the 1 amp transformer.
Thanks to all of those who mailed the 1amp transformers back...we will be able to get all those replaced with the correct ones for this next batch.

We also included a printed copy of the dsp update sheet, just in case :-)

We have 90+ orders for the 150 March production...so tell your friends...looks like the next production after March will not be until Sept/Oct time frame.

Back to school work for me...

Greg

159. Re: [DSP-93:199] No life from the output(s)

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sun, 22 Jan 1995 11:51:15 -0600
To: dsp-93@tapr.org
Message-ID: <ab48497600021004dd16@[204.96.0.163]>
Rendered body type: text/plain

>Well, got it all up and running, but I have an interesting problem
>
>When running testramp or testbuzz (downloaded versions) I get no output.
>
>I have traced it back to the DX pin of both the DAC and the interboard
>connection and there are no signs of life. Any clues? (Solder connections
>look good)
>
>--
>*****
>** Ronald C. Barnes - KA1KJZ Broadcast Engineer, WTXN-TV **

To help us help you, could you give a little more info.

What tests have you run successfully? Unsuccessfully/

At what points are you looking for an output signal?

Are you saying there is NO signal on DX?

What do you mean by "testbuzz (downloaded versions)". Are you not using the .OBJ files on the diskettes?

Ron W5RKN

also:
w5rkn@amsat.org

160. Re: [DSP-93:202] Re: No life from the output(s)

From: kalkjz@tigger.jvnc.net (Ron Barnes)
Date: Sun, 22 Jan 1995 14:27:05 -0500
To: dsp-93@tapr.org
Message-ID: <199501221929.AA12502@tigger.jvnc.net>
Rendered body type: text/plain

>To help us help you, could you give a little more info.
>
>What tests have you run successfully? Unsuccessfully/
>

Monitor test, Speed Test, Memory Test and Testleds all work very successfully. As soon as I get to the test routines for the DAC, thats where it fails.

>At what points are you looking for an output signal?
>

Checked pin 22 and 21 (Output + and -) and there was no life (some low level noise maybe) then tracing back, no serial data on DX, traced that back to pin 10 of interboard connector JP202, still no life. Traced that back to pin 54 of the TMS320C25 and still no life. Cannot directly probe the chip while operating as there is no extender for this kind of a board setup. So, up to the socket pin there is no life on DX while operating. So, ok, maybe a bad socket? Nope, continuity test confirms a good contact between the TMS320C25 and pin 10 of JP102.

>Are you saying there is NO signal on DX?
>

Nope, none, nada. Stays in a low condition. Thought for the heck of it, pulled it high and it goes high, pulled it low, and well, no change (10K ohm to Vcc and Vss). This tells me its staying in a Hi-Z state.

>What do you mean by "testbuzz (downloaded versions)". Are you not using the .OBJ files on the diskettes?
>

I mean downloaded versions as the .OBJ files on the disk (forgive me it was 12am when I wrote that), as they have to be downloaded to the DSP-93, as opposed to the versions on the EPROM (those dont work either).

161. Hot bits in U102 EPROM

From: Mills@huey.udel.edu
Date: Sun, 22 Jan 95 17:15:45 EST
To: dsp-93@tapr.org
Cc: mills@huey.udel.edu
Message-ID: <9501221715.aa04852@huey.udel.edu>
Rendered body type: text/plain

Folks,

With a solid 9-V AC supply and U116 fix, I get signs of life from the rascal, including address bus and data bus high byte; however, the data bus low byte (all bits) sticks at high, regardless of the state of the output enable line. The hot bits cool to zeros when U102 is removed, from which I conclude that U102 is defective. Needless to say, the thing doesn't come up, even though I checked the signals right at the 16550 pins 10 and 11. Can I snatch a replacement?

Dave
w3hcf

162. 9600 bps modems

From: frank@tcet.unt.edu (Frank Perkins)
Date: Sun, 22 Jan 95 20:46:01 CST
To: dsp-93@tapr.org
Message-ID: <9501230246.AA118121@tcet.unt.edu>
Rendered body type: text/plain

January 22, 1995 @ 20:00 CST

CQ: Jeff Garrett ZL1BIV
CC: DSP-93 Users
RE: 9600 bps Terrestrial Operation

A half-duplex version of the 9600 bps modem with active DCD is being tested by the DSP-93 development group and will probably be released before Summer.

W0SL has uncovered a subtle problem when using ANY version of the 9600 bps modem in half duplex. The AC-coupling circuits in the input signal path of the DSP-93 have a very low cut-off frequency compared to, say, a "stock" G3RUH 9600 bps modem. Any DC shift that occurs in the transceiver's discriminator output between TX and RX will come through as a relatively long transient response in the DSP-93 unless the AC-coupling external to the DSP-93 prevents it.

W0SL observed difficulty in receiving half-duplex response packets which he traced to a DC shift occurring in his ICOM-475H discriminator output between transmit and receive. The shift was approximately equal to the peak-to-peak signal level. This shift came through the DSP-93's long time constant AC-coupling, "blinding" the data slicer in the 9600 bps modem just as the response packet came back in.

W0SL fixed the problem at his station by replacing the 10 uF coupling capacitor to the discriminator circuit in his radio with a 1 uF capacitor. This shortened the overall transient response between the DSP-93 and the discriminator to a value that supports half-duplex operation.

What is needed to avoid this problem (if anything) can vary from system to system. Also, reducing the time constant for half-duplex operation may degrade U0-22 reception, which seems to need all the low frequency response it can get. Kudos to Roy W0SL for identifying this very subtle problem.

BTW, you can use the full-duplex modem for half-duplex terrestrial operation in most places. At least here in North Texas, a typical 9600 bps packet is so brief that collisions would be rare at the traffic levels observed. The new modem does add CSMA via the DCD, but I don't think this feature will be vital in most areas. As discussed above, the turn-around problem is not related to having to turn FULLDUP on for terrestrial work.

I do quite a bit of business travel, so please understand I can't always monitor this SIG daily (or even weekly).

73 Frank WB5IPM

163. Documentation scrutiny

From: Mills@huey.udel.edu
Date: Mon, 23 Jan 95 0:19:06 EST
To: dsp-93@tapr.org
Cc: mills@huey.udel.edu
Message-ID: <9501230019.aa06007@huey.udel.edu>
Rendered body type: text/plain

Folks,

While waiting for parts, I spent some time with the schematic and connector pinout diagrams and tried to figure out how this thing works. I was able to snatch the TI TMC320C2X User's Guide and three applications manuals, as well as data sheets for most of the special chips (except that drat Starstuck 16550 or whatever). The application rituals contain a bunch of useful stuff on how to implement IIR and FIR filters, adaptive equalizers and various other mischievities. By the way, somebody asked where to find the miraculous TLC32044 AIO chip; it is in the TI Linear Circuits Data Book, Volume 2.

I found a bunch of places with minor incontinences and possible mistrakes, some of which have already been documented. Having said that, I must disclose my vision is significantly degraded and to have dim eyeball of the documentation is not an understatement. Following are samples of what I can tease from the naked retina and microscope:

Digital 1

There is something going on near pins 56 (XF) and 51 (X1) of U101 (TMS320C25). I assume the classified monitor code uses the external flag XF to enable/disable the EPROMS (U101, U102) and SRAMS (U104-U105) when switching between monitor mode and user mode. If that is the case, the NC next to the meatball near pin 56 is irrelevant and should be erased along with the X2 label beneath X1 near the left margin.

Part of the fun in this exercise is trying to reverse engineer the implementor's minds on how they assume the various jumpers should be used. The watchdog jumpers J103 fit in this category. If a jumper is set on pin 1, I assume the intent is that the EPROM chip enable line barks the dog; if it is set on pin 2, I assume the Q3 output from PAL U112 wags its tail. As no PAL equations are provided, I have no idea what PAL terms define the breed.

I have a dim memory from testing that I could find no -5V voltages perched on pins 45 and 46 of connector J102. I did find the +5V voltages.

It would be nice to know what logic terms kick the SPEED SEL line from PAL U113.

The INT0 interrupt line comes from pin 20 on the TMS320 (U101) and wanders in the bus near PAL U113, but doesn't seem to come out anywhere. My guess is that some hidden PAL output toggles it for what might be a real interesting reason.

I have a lot of trouble with JP103, being apparently used to twitch lots of miscellaneous bits between the boards. On Digital 1, the PAL outputs are labelled Q3-Q10. Making a list of the correspondences on Board 2, I get

Pin	Label	Function
1	+5V	
3	+5V	
5	Q3	watchdog muzzle
7	Q4	TNC input strobe to buffer U213
9	Q5	G (gate) pin 19 of transceiver U216
11	Q6	\DOSTR pin 18 of UART U212
13	Q7	TNC output clock to latch U214
15	Q8	\DISTR pin 21 of UART U212
17	Q9 *	Analog 3 shows this as clock input to latch U206; Analog 4 shows this as \ADS pin 25 of UART U212
19	Q10 *	Analog 1 shows this goes to PAL U210 pins 1 and 19; Analog 3 shows this as clock input to latch U204
2	GND	
4	GND	
6		
8		
10		AIO output, buffered

12 aux input 1 to multiplexor U203
14 aux input 2 to multiplexor U203
16 AIO input, buffered; also appears at X0
18
20

* Obviously, there are some conflicts in the schematic.

Digital 2

The RESET button and R105 should be interchanged; in fact, the RESET button is on the analog board connected by a interboard pin. Big deal. As per electric messages, U116 pin 8 is grounded for at least those of us that have the depredated version of that part.

Digital 3

Capacitor schematic errors corrected as per electric messages.

Analog 1

Are diodes D201 and D202 actually wired according to the schematic? See Page 5-102 in the TI Linear Circuits Data Book. I'm not sure in the configuration shown that latchup can always be prevented, should the analog voltages come up out of order.

It is reported R224 and capacitor C207 bite the dust. I feel better. I take it the WB SEL (JP205) is intended to operate the AIO chip in byte mode, rather than word mode. I can't imagine anybody wanting to do that, but it's nice the implementors thought of it. Pin 1 on the TLC32044 in the parts list and on my board is not used; on the TLC32047 OPTIONAL (sic) mentioned in the diagram, it is used for a special telephone mode. I take it the fancy footwork is so that either part will work.

The power supply voltages shown on JP102 on Digital 1 do not appear on JP202 on Analog 1.

I'm confused on the role of INT1 with respect to the AIO and UART. In principle, there are four interrupts involved, an input and output interrupt for each of these two devices, but only INT1 from pin 18 on PAL U210 appears. I take it the monitor snags the interrupts and software multiplexes it? If so, then I assume the UART would use INT2, but that doesn't appear to be used anywhere. The 8250 SIO INT (sic) line does land on pin 13 of PAL U210, which is even more interesting.

Analog 2

P205 seems nowhere to be found. Is this really P204 in disguise?

Analog 3

JP207 is really JP212. I take it JP211, JP212, JP208, JP210 and JP209 are present in order to make this thing DC-coupled, which tickles me pink.

Analog 4

JP204 lights CD pin 38 on UART U212. Usually, I assume, the attached computer will light DTR (P201 pin 4), which satisfies that craving. I sure like the idea of craving jumpers so that the unit can be operated with only data leads and avoid violations of the Principle of Least Astonishment, should that be necessary.

Analog 5

Are pins 3 and 4 of external power P202 reversed? If so, consider what might happen should somebody wire a mating connector like that.

I take it JP207 is used to enable UART interrupts. I may hanker for use of the UART with interrupts in user code; however, the monitor apparently doesn't use UART interrupts and doesn't provide a hook via the transfer vector in the user program. It would be very useful to do this, for instance to alter parameters on-the-fly while the beast is running and doing useful things.

Epilog

In spite of the above, this thing went together real slick. The bug rate is far below the foo-paws of my own boards first out the gate. I will

Dave
w3hcf

166. DSP-93

From: mccannm@erie.gov (Michael J. McCann)
Date: Mon, 23 Jan 95 09:17:11 EST
To: dsp-93@tapr.org
Message-ID: <9501231417.AA00942@erie.gov>
Rendered body type: text/plain

Hello DSP-93 Group

I have my DSP-93 working with a Radio Shack power supply (RS 273-1611B). It is a 1.3 A supply, but it appears to be working OK. I have run the EPROM and disk OBJ file versions of TESTLEDS, MEMTEST, TESTRAMP, and TESTBUZZ with good results.

I wrote a short program to test the DEBUG subroutine in the EPROM; the program works, but I found that the DEBUG routine does not apply the same rules to input RS-232 control signals that the other parts of the monitor uses. DEBUG acts like it needs to see a signal level transition, rather than just RTS and DTR asserted. I am using PROCOMM to access the DSP-93; PROCOMM asserts RTS and DTR on entry and deasserts RTS and DTR on exit. About 1 time in 3, when I load my test program with DSPLOAD and start PROCOMM, I do not get output from DEBUG, if I exit and restart PROCOMM I get output from PROCOMM. PROCOMM is set up for 8 data bits, 1 stop bit, no parity, and no flow control.

I found some odd things with the TESTLEDS program in the "\DSP93\ASM" directory. The EPROM and OBJ versions of TESTLEDS work fine. I assembled the TESTLEDS source in "\DSP93\ASM", and loaded with DSPLOAD, the program does not work. The OBJ file produced by TASM is the same length as the file in "\DSP93\OBJ" but there are differences in the last two lines of Intel Hex file. Also, the dates on the source file and the OBJ file supplied on the disks are two months apart.

TESTLEDS.ASM 10-17-94 3:37a
TESTLEDS.OBJ 12-12-94 3:23a

73 for now.
Mike McCann, KB2FMG

167. Re: [DSP-93:209] DSP-93

From: Mark L. Hammond <hammond@camel.campbell.edu>
Date: Mon, 23 Jan 1995 11:45:16 -0500
To: dsp-93@tapr.org
Message-ID: <9501231640.AA06058@camel.campbell.edu>
Rendered body type: text/plain

Mike,

Glad you are under way with your unit.

Try the "simple" assembly test first. Use asmall.bat to assemble all of the code. You should be able to cd to the ASM directory, type "amsall" and have all the files assemble without error. PRESUMABLY this is how I created all of the .OBJ files that were distributed. You may want to create a duplicate subdirectory of the ASM directory so that you can experiment. You should end up with MOST (but not all) of the .obj files that were distributed, stamped with your current system date and time.

Regarding the dates below, the TESTLEDS.ASM file was last MODIFIED on 10-17-94. This source was (presumably) used to assemble the TESTLEDS.OBJ on 12-12-94 by yours truly.

Some of the source and the resulting .OBJ files shipped may be 3 or 4 months apart. It just depends on the last date modified and when the source was used to assemble the .obj file.

Let me know how the "asmall" test works out....if the TESTLEDS.OBJ file that it creates doesn't work, try reinstalling from the disks shipped. Maybe you have a corrupt file? Just a thought....

(lots deleted)

>The

>OBJ file produced by TASM is the same length as the file in "\DSP93\OBJ" but

>there are differences in the last two lines of Intel Hex file. Also, the dates

>on the source file and the OBJ file supplied on the disks are two months apart.

>

>TESTLEDS.ASM 10-17-94 3:37a
>TESTLEDS.OBJ 12-12-94 3:23a
>
>73 for now.
>Mike McCann, KB2FMG

Mark L. Hammond, Ph. D. (KC4EBR)
hammond@camel.campbell.edu

Campbell University
Department of Biology
Buies Creek, NC 27506
1-919-893-1734 or
1-800-334-4111, ext. 1734

168. Works & stuff

From: deh6@po.CWRU.Edu (Donald E. Haselwood)
Date: Mon, 23 Jan 1995 12:11:11 -0500
To: dsp-93@tapr.org
Message-ID: <199501231711.MAA28900@slc8.INS.CWRU.Edu>
Rendered body type: text/plain

They work! At least after some troubleshooting.

Two of us built the units together (Charlie, W4OQM & Don, K4JPJ), comparing as we went. It caught a couple of mistakes, however when we powered up the units they did not work. As we worked through the problems it was very reassuring to have two units, as they both behaved exactly the same way, indicating the cause was "something stupid" rather than a random error.

Charlie gave a jocular, "Oh well, it doesn't work, toss this aside. What's the next project," as the reality that some debugging was going to be needed sunk in.

Problem #1: Reset-- Item #3 under Hardware Debugging was VERY helpful. If we would have read ALL the Internet messages we would have saved some time and put in the MX692/U116 final-fix-- BUT you know it is when the end is getting close and the excitement is building! At the moment we have the MX692 removed and a pull-up resistor/reset sw doing the reset job.

Problem #2: After solving the reset, we did not get the "*" on the Mac screen. The documentation says, "Start off with the hardware and software handshaking disabled." This is easily interpreted to suggest that the lines such as RTS are not utilized.

After getting RTS right, both units would produce a single "*" when powered up. Sometimes the unit would not automatically reset and would require pressing the reset switch, however, ONE AND ONLY ONE "*" would be produced for one power up cycle. A second press of the reset switch could not produce another "*".

After much "fussing" including tracing chars with a scope from the Mac to the UART, we eventually we tried tying DTR to RTS (pin 4 and 7 on the DB9). This solved the problem and the whole thing appears to work.

Given the large amount of time we spent trying to figure out the serial communications, a few more words might help others. Here are some suggested words:

"For Mac users: The unit resets and the yellow LED flickers a couple times and comes on steady, but nothing appears on the Mac screen. The problem may be with the RTS line.

The unit displays "*" when powered up, but it will not respond to Enter or "?." This may be due to the cable not presenting a + signal on DTR. Tie the RTS (pin 7) DTR (pin 4) together."

The 1 amp transformer seems to work OK--

W4OQM had sent his transformer to TAPR, but K4JPJ had not. To test things out we used the 1 amp supply. A scope on the unregulated side of the DC supplies shows over 2 volts across the regulator on the ripple valleys. The both .22 ohm resistors have about 50 mv drop which figures to a total of slightly under 1/2 amp dc. We did not measure the load current for the analog +- 5

volts, however.

Overall, a nice kit.

Don, K4JPJ

169. Re: [DSP-93:209] DSP-93

From: rparsons@bga.com (Ronald G. Parsons)
Date: Mon, 23 Jan 1995 11:19:11 -0600
To: dsp-93@tapr.org
Message-ID: <ab4993db010210046c96@[198.3.117.36]>
Rendered body type: text/plain

Mike,

>I wrote a short program to test the DEBUG subroutine in the EPROM; the program
>works, but I found that the DEBUG routine does not apply the same rules to
>input
>RS-232 control signals that the other parts of the monitor uses. DEBUG acts
>like it needs to see a signal level transition, rather than just RTS and DTR
>asserted. I am using PROCOMM to access the DSP-93; PROCOMM asserts RTS
>and DTR
>on entry and deasserts RTS and DTR on exit. About 1 time in 3, when I load my
>test program with DSPLOAD and start PROCOMM, I do not get output from
>DEBUG, if
>I exit and restart PROCOMM I get output from PROCOMM. PROCOMM is set up for 8
>data bits, 1 stop bit, no parity, and no flow control.

If you would like to share that DEBUG test program, I'll play with it here
and see what I observe.

>I found some odd things with the TESTLEDS program in the "\DSP93\ASM"
>directory.
>The EPROM and OBJ versions of TESTLEDS work fine. I assembled the TESTLEDS
>source in "\DSP93\ASM", and loaded with DSPLOAD, the program does not
>work. The
>OBJ file produced by TASM is the same length as the file in "\DSP93\OBJ" but
>there are differences in the last two lines of Intel Hex file. Also, the
>dates
>on the source file and the OBJ file supplied on the disks are two months apart.
>
>TESTLEDS.ASM 10-17-94 3:37a
>TESTLEDS.OBJ 12-12-94 3:23a

The >OBJ files are small. Could you send both of them via e-mail (just
paste them into a message) and I'll take a look.

The dates shouldn't matter. Everything was re-assembled just before going "gold".

Oh, by the way, software issues should be on dsp@tapr.org, not dsp-93@tapr.org.

Ron W5RKN

also:
w5rkn@amsat.org

170. No life from the output(s)

From: kalkjz@tigger.jvnc.net (Ron Barnes) (by way of kalkjz@tigger.jvnc.net (Ron Barnes))
Date: Mon, 23 Jan 1995 21:21:30 -0500
To: dsp-93@tapr.org
Message-ID: <199501240223.AA04111@tigger.jvnc.net>
Rendered body type: text/plain

Well, I will try this again, seems my last messages have the list stumped...

>To help us help you, could you give a little more info.
>
>What tests have you run successfully? Unsuccessfully/
>

Monitor test, Speed Test, Memory Test and Testleds all work very
successfully. As soon as I get to the test routines for the DAC, thats
where it fails.

>At what points are you looking for an output signal?
>

Checked pin 22 and 21 (Output + and -) and there was no life (some low level

noise maybe) then tracing back, no serial data on DX, traced that back to pin 10 of interboard connector JP202, still no life. Traced that back to pin 54 of the TMS320C25 and still no life. Cannot directly probe the chip while operating as there is no extender for this kind of a board setup. So, up to the socket pin there is no life on DX while operating. So, ok, maybe a bad socket? Nope, continuity test confirms a good contact between the TMS320C25 and pin 10 of JP102.

>Are you saying there is NO signal on DX?
>

Nope, none, nada. Stays in a low condition. Thought for the heck of it, pulled it high and it goes high, pulled it low, and well, no change (10K ohm to Vcc and Vss). This tells me its staying in a Hi-Z state.

>What do you mean by "testbuzz (downloaded versions)". Are you not using the >OBJ files on the diskettes?
>

I mean downloaded versions as the .OBJ files on the disk (forgive me it was 12am when I wrote that), as they have to be downloaded to the DSP-93, as opposed to the versions on the EPROM (those dont work either).

A Very Dissatisfied DSP-93 Customer

```
--
*****
** Ronald C. Barnes - KA1KJZ          Broadcast Engineer, WTXN-TV      **
**                               ARRL CT Section Technical Specialist **
** internet: ka1kjj@tiger.jvnc.net   Member, Society of Broadcast Engineers **
** packet : ka1kjj@n4gaa.ct.usa.na   Member, IEEE                     **
**                               **                                     **
** Ask me about my TAPR DSP-93, it makes a good story                 **
*****
```

171. Re: [DSP:11] TESTLEDS OBJ

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 24 Jan 1995 11:45:02 -0600
To: dsp-93@tapr.org
Cc: dsp@tapr.org
Message-ID: <ab4ae8da00021004694b@[198.3.117.40]>
Rendered body type: text/plain

To: Mike McCann, KB2FMG

I found your problem. I do not know where you got your copy of the file TASM3225.TAB but it appears that yours has an error in it. I looked at the copy in the ASM directory from the diskette and it is correct.

In any case, the problem is with the BANZ command. Look for the lines:

```
BANZ @,!,@      FB88 4 TLK  1 0 07
BANZ @,!        FB80 4 SWAP 1
BANZ @          FB90 4 SWAP 1
```

Note that the third line has FB90. Change yours if necessary.

BTW, I hear we are changing our "rules" and all DSP-93 stuff (soft and hard) will be on dsp-93@tapr.org.

Ron

```
>This is the version of TESTLEDS in \DSP93\OBJ.
>
>:18200000FF801008FF801008FF801008CE01C800D001000004
>:182018006062E362D00100006062E762E662EB62FE80104AD00100800F
>:182030006062E762FE80104AD00100406062E762FE80104AD0010000F0
>:182048006062E762D00100406062EB62FE80104AD00100806062EB621D
>:18206000FE80104AD00100006062EB62D00101006062E662FE80104AFC
>:18207800D00102006062E662FE80104AD00104006062E662FE80104AE4
>:18209000FF80100EC2FFC1FFC337558BFB90104D5589FB90104C558AB4
>:0620A800FB90104BCE2658
>:00000001FF
>
>This is the TESTLEDS.OBJ generated by TASM.
>
```

```
>:18200000FF801008FF801008FF801008FF801008CE01C800D001000004
>:182018006062E362D00100006062E762E662EB62FE80104AD00100800F
>:182030006062E762FE80104AD00100406062E762FE80104AD0010000F0
>:182048006062E762D00100406062EB62FE80104AD00100806062EB621D
>:18206000FE80104AD00100006062EB62D00101006062E662FE80104AFC
>:18207800D00102006062E662FE80104AD00104006062E662FE80104AE4
>:18209000FF80100EC2FFC1FFC337558BFB80104D5589FB80104C558AD4
>:0620A800FB80104BCE2668
>:00000001FF
>
>I have reinstalled the DSP93 disks and run asmall.bat (no error messages from
>TASM). The results are the same. I'll upload my DEBUG test program tomorrow.
>
>73s
>Mike McCann, KB2FMG
```

Ron W5RKN

also:
w5rkn@amsat.org

172. DSP-93

From: crohrer@VNET.IBM.COM
Date: Tue, 24 Jan 95 13:02:56 CST
To: dsp-93@TAPR.ORG
Message-ID: <m0rWriY-0001ViC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

The build is complete and, thanks to your E-MAIL notes the unit powered up and passed all tests on the first try. Nice unit, the team did a great job in design. Many Thanks to you all!

Now on a slightly negative line: As I reviewed the last pages of the built document, I felt as if I was slipping off a cliff, or more exactly, as if I was using a manual from Pac-Comm. Things just ENDED. I was left with two diskettes, a schematic, and I'm sure tons of details buried therein that will raise more questions than provide answers needed at this stage. I'm an experienced 9600 baud and 1200 baud PSK satellite user, so I'm well aware of hookup requirements such as radios and TNC, but gosh if I was a bit of a novice I would be way out in left field at this stage of the project. In a word LOST. For example I remember soldering in headers that may need jumpers, how do I handle that? Additionally should I use firmware or DSPLOAD OBJs for operating software and which is most current and/or recommended for my initial use. etc, etc .. I would suggest that to support the least of us out here, that you lead us into the lowest common denominator of packet operations, that is 1200 baud standard terrestrial packet. Devote a page or two at the end of the build manual focusing on each step required. Ex: Should the attached TNC have the DCD STATE function, how/where do I adjust TX Deviation, what jumpers, how many RS232 cables to the computer and when, what lights should blink on the DSP-93, what program in the DSP-93 and what will it expect from my application? Most likely this is beyond the scope of the project, but I believe an effort to demonstrate 'user friendliness' will greatly enhance DSP-93 acceptance.

173. Re: [DSP-93:215] DSP-93

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 24 Jan 1995 15:58:20 -0600
To: dsp-93@tapr.org
Message-ID: <ab4b254b00021004cd5e@[204.96.0.75]>
Rendered body type: text/plain

To: crohrer@VNET.IBM.COM (Sorry I don't have your name)

Thanks for your comments. I'm glad the unit is up and running.

This is not an excuse for omissions in the DSP-93 documentation. But remember, as the DSP-93 brochure said "We don't think you will have trouble with the DSP-93 kit, but it does require some knowledge and experience to successfully go from a kit to a finished, usable unit, depending on the mode of operations."

It would be nice to have "Heathkit" level documentation, but remember, this was all put together by volunteers. I would ask the following. As you successfully interface your unit, write up a description of what you did, how well it worked, things to watch out for, etc. We'll try to collect and distribute these and those that follow after us will not have to re-invent the wheel. If you have comments or additions to the files in the .DOCS directory, let us know.

And if you have problems or questions, throw them out here on dsp-93@tapr.org. Hopefully someone who has been there before will be able

to help.

Join the quest. Participate!

>The build is complete and, thanks to your E-MAIL notes the unit powered up
>and passed all tests on the first try. Nice unit, the team did a great job
>in design. Many Thanks to you all!
>Now on a slightly negative line: As I reviewed the last pages of the built
>document, I felt as if I was slipping off a cliff, or more exactly, as if
>I was using a manual from Pac-Comm. Things just ENDED. I was left with two
>diskettes, a schematic. and I'm sure tons of details buried therein that
>will raise more questions than provide answers needed at this stage. I'm an
>experienced 9600 baud and 1200 baud PSK satellite user, so I'm well aware
>of hookup requirements such as radios and TNC, but gosh if I was a bit of a
>novice I would be way out in left field at this stage of the project. In a
>word LOST. For example I remember soldering in headers that may need jumpers,
>how do I handle that? Additionally should I use firmware or DSPLoad OBJs for
>operating software and which is most current and/or recommended for my initial
>use, etc, etc .. I would suggest that to support the least of us out here, that
>you lead us into the lowest common denominator of packet operations, that is
>1200 baud standard terrestrial packet. Devote a page or two at the end of the
>build manual focusing on each step required. Ex: Should the attached TNC have
>the DCD STATE function, how/where do I adjust TX Deviation, what jumpers, how
>many RS232 cables to the computer and when, what lights should blink on the
>DSP-93, what program in the DSP-93 and what will it expect from my application?
>Most likely this is beyond the scope of the project, but I believe an effort
>to demonstrate 'user friendliness' will greatly enhance DSP-93 acceptance.

Ron W5RKN

also:
w5rkn@amsat.org

174. Wish List

From: Antonio Fernandez <100341.640@compuserve.com>
Date: 24 Jan 95 17:13:23 EST
To: DSP-93 mail list <dsp-93@tapr.org>
Message-ID: <950124221322_100341.640_BHA10-1@CompuServe.COM>
Rendered body type: text/plain

Hi DSP-93 group,

These are some suggestions for the DSP-93 wish list.
Is it possible to have a DCD indication on the FSK modem? I'm used
to monitor the DCD led while the satellite passes and I miss it.
I've been able to hook up the DSP-93 to a MFJ 1278 and to a Tiny 2
clone. The DSP-93 is connected to the 1278 as suggested in the
assembly manual, in this way the DCD on the TNC never lights. The
other TNC uses a different disconnect header pin layout and the DCD
led on the TNC is always on.

I've trying to do some modem switching with the event scheduler in WISP,
but the problem is that to get out of the PSK modems needs a press in the
h/w reset. Is it possible to program the PSK modems -and others- as the
FSK modem so they can be ended by soft? This would allow automated
switching/operation.

Would like to have a default modem on start-up, may be this option could be
programmed in the user ROM.

These are end user suggestions and don't know if they are welcome as such
in this list, if it's not the case please accept my apologies and let me know.

Last question, how can I subscribe to the soft discussion list? Is it for
anyone, i.e. non-programmers ?

Best 73 de Toni, ea4le

175. PUZZLES

From: wtb@partyline.org
Date: Tue, 24 Jan 95 13:47:30
To: dsp-93@tapr.org
Message-ID: <9501241347.0JDI100@partyline.org>
Rendered body type: text/plain

dsp93 hardware is fully assembled and tested thru testbuzz but am
puzzled by two things;
have not been able to find j203 to hook up scope.

vr203 tests out at -5v okay but what is labeled -9v is close to 13.5v.
...testleds,monitor, download, 19200 with XT, reset, all work as needed.
bill NØLIK reply wtb@partyline.org

176. Schematic error

From: deh6@po.CWRU.Edu (Donald E. Haselwood)
Date: Tue, 24 Jan 1995 19:32:13 -0500
To: dsp-93@tapr.org
Message-ID: <199501250032.TAA26221@slc8.INS.CWRU.Edu>
Rendered body type: text/plain

Schematic error:

Pins 4 and 5 of U215 should go to pins 12 and 13 of U206.
Following the schematic makes LEDs 213 and 214 reverse when the
program is written. PORTS.INC as well as TESTLEDS.ASM (of
course) has it right.

I started with something simple to test out the programming stuff
as well as begin to understand the beast. A simple modification
to TESTLEDS to make a different pattern led to the discovery--I
was following the schematic rather than PORTS. In the
process I put together the following table for reference.

			Program					
			Output					
Schematic	Panel	Port*	bit*	IC	pin	Connector	pin name	
LED	#	xxh	xxxxh					
L211	1	07	0080	U204	Q8 12	P204	4	
L212	2	07	0040	U204	Q7 13	P204	3	
L213	3	0B	0040	U206	Q8 13	P204	2	
L214	4	0B	0080	U206	Q7 12	P204	1	
L215	5	06	0100	U214	Q1 19	TNC	1 CD I	
L216	6	06	0200	U214	Q2 18	TNC	6 KEY I	
L217	7	06	0400	U214	Q3 17	TNC	10 KEY I	
L218			Pwr(power led)					

IC - 74ALS573 Octal Latch

Example from TESTLEDS.ASM:

* Program output bit to turn on LED xxxh - 0080h (Note 0080h
turns off all the other bits in the latch).
* Port xxh - 07h

```
LED201    LALK    0080h    ; load BIT D7 HIGH
          SACL    D0       ; into D0
          OUT     D0,07h   ; out to LED 201
```

Regards,
Don, K4JPJ

177. Re: [DSP-93:217] Wish List

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 24 Jan 1995 19:28:41 -0600
To: dsp-93@tapr.org
Message-ID: <ab4b566e01021004583b@[198.3.117.33]>
Rendered body type: text/plain

Toni, Saw your test on U0-22. Congrats!

```
>Hi DSP-93 group,
>
>These are some suggestions for the DSP-93 wish list.
>Is it possible to have a DCD indication on the FSK modem? I'm used
>to monitor the DCD led while the satellite passes and I miss it.
```

In [DSP-93:205] 9600 bps modems, Frank noted that a half-duplex 9600 modem
with active DCD is under development. I hope he will add a DCD LED.

```
>I've trying to do some modem switching with the event scheduler in WISP,
>but the problem is that to get out of the PSK modems needs a press in the
>h/w reset. Is it possible to program the PSK modems -and others- as the
>FSK modem so they can be ended by soft? This would allow automated
>switching/operation.
```

Here's an opportunity to get your feet wet in DSP programming. Look in the
source for PKT.ASM at the label CK_RESET. This will give you a road map for
adding a reset key command.

>Would like to have a default modem on start-up, may be this option could be
>programmed in the user ROM.
>
>These are end user suggestions and don't know if they are welcome as such
>in this list, if it's not the case please accept my apologies and let me know.

Keep the suggestions coming.

>Last question, how can I subscribe to the soft discussion list? Is it for
>anyone, i.e. non-programmers ?
>
>Best 73 de Toni, ea4le

The latest word is the the dsp@tapr.org will be dropped and all discussion
(hard and soft) will be here.

Ron W5RKN

also:
w5rkn@amsat.org

178. Re: [DSP-93:218] PUZZLES

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 24 Jan 1995 19:28:46 -0600
To: dsp-93@tapr.org
Message-ID: <ab4b58c002021004e3bb@[198.3.117.33]>
Rendered body type: text/plain

>dsp93 hardware is fully assembled and tested thru testbuzz but am
>puzzled by two things;
>have not been able to find j203 to hook up scope.
>vr203 tests out at -5v okay but what is labeled -9v is close to 13.5v.
>..testleds,monitor, download, 19200 with XT, reset, all work as needed.
>bill N0LIK reply wtb@partyline.org

Sorry, That should have said JP203. [Mark, please note]

The "labeled -9v is close to 13.5v" is what is expected.

Ron W5RKN

also:
w5rkn@amsat.org

179. Re: [DSP-93:219] Schematic error

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 24 Jan 1995 19:28:49 -0600
To: dsp-93@tapr.org
Message-ID: <ab4b594e030210040585@[198.3.117.33]>
Rendered body type: text/plain

>Schematic error:
>
>Pins 4 and 5 of U215 should go to pins 12 and 13 of U206.
>Following the schematic makes LEDs 213 and 214 reverse when the
>program is written. PORTS.INC as well as TESTLEDS.ASM (of
>course) has it right.

That is correct. This has been corrected in the new schematics in preparation.

Ron W5RKN

also:
w5rkn@amsat.org

180. Re: [DSP-93:218] PUZZLES

From: creek!hammond@camel.campbell.edu (Mark L. Hammond)
Date: Wed, 25 Jan 1995 01:59:43 +0000 (GMT)
To: camel!tapr.org!dsp-93

Message-ID: <m0rWx1L-00006GC@creek.uucp>
Rendered body type: text/plain

Glad things are rolling along for you....

Did you mean that the indicated -9V measures +13.5V, or -13.5V???

I remember my beta unit having the same symptom on that test point, too. As I recall, several others saw the same thing, too. So, I guess my advice is "don't panic". About -13V is what I measured, too.

Don't know about j203.....I don't have a scope, and the pins, etc have undergone a numerical translation or two so I won't even guess on that one.

Congrats guys, on getting your units going. I'm a biologist, and don't even own a oscope.....if I could get my beta-test unit going, you can get yours going too! :-)

> dsp93 hardware is fully assembled and tested thru testbuzz but am
> puzzled by two things;
> have not been able to find j203 to hook up scope.
> vr203 tests out at -5v okay but what is labeled -9v is close to 13.5v.
> ..testleds,monitor, download, 19200 with XT, reset, all work as needed.
> bill NOLIK reply wtbb@partyline.org
>

--

Mark L. Hammond [KC4EBR] -- Proud TAPR/AMSAT DSP-93 Beta tester --

181. Re: [DSP-93:215] DSP-93

From: creek!hammond@camel.campbell.edu (Mark L. Hammond)
Date: Wed, 25 Jan 1995 02:03:50 +0000 (GMT)
To: camel!tapr.org!dsp-93
Message-ID: <m0rWx5L-00006GC@creek.uucp>
Rendered body type: text/plain

In response to the "cliff hanger syndrome", how about giving the project a real boost and documenting what you needed, but did not have in front of you?

I think it was a case of the beta team sometimes not seeing the forest for the trees....maybe a little too familiar with somethings, overlooked some others.

We will incorporate your ideas before the next production run if possible. Thanks for the constructive criticisms. We need it.....remember, this IS the first production run!

--

Mark L. Hammond [KC4EBR] -- Proud TAPR/AMSAT DSP-93 Beta Tester --

182. [DSP-93:135] Build Update 1/25/95

From: rparsons@bga.com (Ronald G. Parsons)
Date: Wed, 25 Jan 1995 07:16:17 -0600
To: dsp-93@tapr.org
Message-ID: <ab4bfd89000210049b8d@[204.96.0.77]>
Rendered body type: text/plain

DSP-93 Build Suggestions
December '94 Production

Updated: 1/25/95

We will try to update this message as the build happens and post it so ever so often.

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', Subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94).

----- HERE'S YOUR CHANCE TO HELP THE GROUP -----

As you interface your DSP-93 to your radio, etc., how about writing up your experiences, procedures, problems, etc. Post your results and we'll collect them.

What would you like to see in an operations manual? Let me know and I'll sign you up for a section or two.

January 25th, 1995 Update Section

The references to R214 and R215 in FSK.DOC, PKT.DOC and TESTXXXX.DOC are reversed. R215 (and R216) affects the input gain while R214 (and R213) affects the output signal.

The connector referred to as J203 in TEXTXXXX.DOC actually refers to JP203.

The test point labeled -9V will have closer to -13V on it.

January 16th, 1995 Update Section

* Pin 3 on DSP-93 TNC not at 5V

A pullup resistor was left off the DSP-93 Board 2 to pullup pin 3 on the TNC connector (between U113 and U114). A solution is to solder a resistor (about 10k ohms) on the bottom of Board 2 between pin 3 of the TNC connector and U113 pin 20 (+5V). Be careful not to short either lead to any uninsulated point on the bottom of the board.

* Power on and off caution

It is also important to note that the DSP-93 (as well as most other radio modems) may cause your transmitter to go into transmit mode briefly when the DSP-93 is powered on and/or powered off. This can occur even if the initializations lines referred to in the "Radio Port Configuration Notice" are properly configured. Take precautions so that your equipment will not be damaged if this should occur.

* Another solution to the Icom up/down tuning line

As mentioned on pages 14 and 33 of the Assembly Manual, you were given a work around for the Icom up/down tuning line by placing the resistors in the cable to an Icom radio. If you will need this tuning arrangement, another solution is to solder resistors R220 and R223 on to the bottom of Board 2. Solder one of the resistors between the square pad of R223 and U205 pin 6. Solder one of the resistors between the square pad of R220 and U205 pin 8. Be careful not to short either lead to any uninsulated point on the bottom of the board.

* R104 in parts and installation

>From ERRATA Sheet (dated 12/18/94)

In the parts list on page 3 and the build instructions on page 8, R104 is described as a 50 ohm resistor (green-black-black-gold). It should have been described as a 51 ohm resistor (green-brown-black-gold).

* Page 20 (volume control)

Page You may need to snap off or bend the antirotational tab of the front panel pot when installing it so that it fits flat against the front panel.

January 14th, 1995 Update Section

* Spacers used between boards

It has come to the attention of the project that not all the spacers are the same length. There is a difference of about 1mm in the two type of spacers. If the builder has these slightly shorter spacers, then when the two boards are stacked there will be a slight space between the top of the spacer and the bottom of the top board when the interboard connectors are placed fully into position. It is NOT suggested that the builder secure down the screws so as to place stress on the top board. The best solution will be on a case by case basis. If you notice a gap of between .5mm and 1mm between the top of the spacer and the bottom of the top board, then simply place a small washer in the gap. This is the simplest way to correct the problem. The other way is to just tighten the screws so that they are secure, but not placing stress on the top board. (Thanks to Vince KD7AI for catching this)

* PC and Mac serial hookup

Answers to questions regarding a problem about getting a computer to talk out the serial line to the dsp-93.

-- Are you sure you have all the necessary wires in your serial cable. If I remember correctly, you may be using a Mac. The cable requires RTS,CTS and not all serial cables carry this. (Ron, W5RKN)

-- check out the handshaking used by your terminal program. You should set it for NO handshaking whatsoever...this burns me from time to time when I switch terminal programs or operating systems. (Mark, KC4EBR)

January 11th, 1995 Update Section

* MAX692CPA Part

The first production run of DSP-93 were shipped with a MX692CPA, instead of the required MAX692ACPA. The 'A', turns out to be significant. The solution for using this chip (692CPA) on the DSP-93 is simple:

Ground pin 8 (VBAT). Then, the unit will work fine with either of the two MAXIM chips (692CPA or 692ACPA). You will find a hole next to pin 8 of U116. This pad is connected to pin 8 on the circuit side (bottom) of the PC Board. Solder a short jumper wire from this pad to pin 3 of U116 (GROUND). Now you can use either device (692CPA or 692ACPA). This fix has been tested with both types of devices and it works fine. NO CUTS ARE REQUIRED ON THE BOARD.

* The following has been added to the build doc.

Be sure to read the following paragraphs carefully.
You must configure your DSP-93 properly or you may cause your radio to go into a transmit mode after power up or reset. If your radio is placed in transmit, it may burn out a preamplifier or damage your radio. If you read and understand the following inThe RADIO IO ports must be configured to a determined radio port control state at power up by strapping certain lines on the DB25 "Interface Port" interfacing the TNC. The monitor code checks the logical state of four lines after a power up or reset. The logical state of these lines will establish the initial output condition of the lines which control your radio's push to talk line and the external frequency shifter. It is suggested that you configure these lines with jumpers to +5 or ground according to the requirements of your radio. Refer to your radio's manual for information about how these signals will affect the radio's operation. In other words, do you ground your radio's PTT input to key your radio or do you take it to plus five volts? After you have it wired, test it with your equipment to be sure things are working as you expect. Remember, with computers and so many things to connect properly it is easy to get something wrong and cause a problem so double check everything.

The jumpers to configure the four radio control ports can be placed on a 20 pin header. This header will then plug into the extra connector placed on the ribbon cable connecting the DB25 "Interface Port" and the 20 pin header on board two.

Refer to section "IO Port Configuration Setup" of your assembly manual, near the back (page 33 of First Printing), for more information.

January 10th, 1995 Update Section

* Good News! A source for 1.5amp transformers has been located and transformers should no longer be a problem. They will be shipped to everyone notifying the office that they require a replacement supply. Supplies are expected into the office on January 17th.

* Typo. page 15 col 1 para 6. Should be R217 not R127 and perhaps at end of line add U205 pin 14. (Ian, ZL1A0X)

* Page 15 col2 ... suggest that C214 be included in group below or maybe highlight it some way. I was caught out and placed a 0.1 instead of 1.0UF cap in position C214. (Ian, ZL1A0X)

* Page 20 col 2 re speaker wire. There is not a square PCB pad as mentioned in 2nd from bottom paragraph. (Ian, ZL1A0X)
NOTE: The square pad was suppose to be the hole next to the edge of the

board.

* Page 21 RESET button. Should mention that it is soldered onto board 1. There is also a reset position in the same area on Board 2. (Ian, ZL1A0X)

* When installing the interboard connectors JP201, JP202, JP203, and JP205 you need to be careful. Extra care is needed when handling the boards after they have been installed. (Jeff, ZL1BIV)

P.S. Congrats to Jeff, ZL1BIV and Ian, ZL1A0X for the first units finished and working.

January 2nd, 1995 Update Section

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Schematics Changes: On page 3 of 3 Digital:Power Supply

C118 & C119 are drawn twice: C119 once as a by-pass caps 0.1 and again as a 4.7 uF filter cap. and C118 in the power supply filter and in the by-pass cap drawing.

Change C119 from a 4.7 uF to a 0.1. Remove the extra C119. Change the extra C118 to C123. (Bob de N5BRG)

* Schematics Changes: On page 3 of 3 Digital:Power Supply

C123 is not on the diagram. It's a by-pass for U116 and is 0.1 uF. Add this to your schematic. (Bob de N5BRG)

* Schematics Changes: On page 2 of 3 Digital reset and Clock:

C110 : The value is not given just the labeled CAP. The value of C110 is 0.1 uF. Correct your schematic. (Bob de N5BRG)

* Page 19

The LED flats are small and hard to see. It might be a good double check and to mention the SHORT lead (cathode) goes in the square hole. The bend is about where the marking crimp's are on the leads. (Bob Winingham KC5EJK)

LED leads are not always cut this way. We should mention this in case they are. Be sure to look at the flat of the package to double check. (Bob de N5BRG).

* Page 10/col 2

It has been suggested:

P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together. (Jim de K4GV0)

I have soldered a number of these connectors to boards by just placing the connector flat on the PC board and filling the three holes with solder. I used a 25W soldering iron. This method works. (Bob de N5BRG)

* R224 in parts and C207 on schematics

R224 was dropped in the production board, but was not removed from the parts list. This means you have an extra resistor for this part. It was removed from page 14 of the install. It is also shown on the schematics on page 1 of 5 along with a capacitor marked as C207. Both of these should be marked out in the schematic. They do not exist on the PC boards. The identifier C207 was used on the capacitor placed near U202 and it is connected to pins 1 and 2 of U202. This should be added to the schematic on page 3 of 5. C207 is a 22 pF capacitor. (Bob de N5BRG)

* Page 17 (JP208 2 pin Male Header)
JP208 was left off the parts list and parts placement diagram. It is in the install section. This is a two pin jumper located next to R215 on board 2. If you are short a jumper and you did not install J100 then cut a pin off this part and use it for J208. (Bob de N5BRG)

* You have a Mac and need to read the IBM disks.
I have a Macintosh and I had no problem using Apple File Exchange to read the two computer disks into my computer. In addition, PC Exchange version 2.0.2 on system 7.5 works fine. (Bob KC5EJK)

I used DOSMouter to read the files onto my Mac. (Greg, WD5IVD)

* Flux removal
There has been a long discussion on the best ways to handle flux removal. Refer to the dsp-93 mail list archives for the information.

December 30th, 1994 Update Section

* Be sure to check the bottom of the bags for parts that might be stuck. The enclosure hardware was in it's own little plastic bag.

* Inter-board connectors
When installing, make sure that the 83B parts (the longer ones) are used on board 2. Refer to the supplied sheet on the errata, which shows the connectors in 1:1 size for comparison. The shorter ones on Board 1 (bottom) will bet cut off, while the longer ones are used to connect it to board 2. The difference in lengths between 63B and 83B is about a 1/4 inch. These are almost impossible to remove when installed, so DOUBLE CHECK!
(** For International builders the component ref sheet is in the build doc **)

* Page 3/2nd col (Jim de K4GV0)
R105 should be (red-red-brown-gold). It is correct on install page.
R211 should be (red-black-orange-gold). It is correct on install page.

* Page 7, Socket Install
It has been suggested:
That header J100 be installed before the U114 and U115 sockets are installed, due to the tight fit. (Jim de K4GV0)
TAPR NOTE: This will be corrected in the next run of the board.

* Page 9 (C113 and C114)
It has been suggested:
If you are putting zig-zags in the leads of the 0.1 caps to make them fit the hole spacing watch out for C113 and C114 as there are small land-holes between and the solder might wick over if the cap leads are touching the board at that spot. (Bob KC5EJK)
TAPR NOTE: The via location will be corrected in the next run of the board.

* Page 15/col 1
It has been suggested:
The power jumper that need to be added to the +5 of Pin 14 and Pin 1 of the resistor strip it would have been better if I had put the jumper in and then soldered the pins. I could have placed a small wire into the pad holes or wrapped around the pins. (Bob KC5EJK)
TAPR NOTE: This will be corrected in the next run of the board.

* Page 15/16
My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16. (Bob KC5EJK)

* Page 17 JP207 and JP212
These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212
TAPR NOTE: This will be corrected in the next board production.

* Page 18 P203AC Jack
The directions say to solder in at position P100, it should be position P203. Typo.

* Page 18/col 2 Crystal
It has been suggested:
Somehow reading the Crystal instructions misses telling people with a crystal with short leads that they need to make three wires. Two for the bottom leads and one for the can lead. Someone might mount the crystal upright. I hope when the instructions said flat it was telling me (on its

side). (Bob KC5EJK)

TAPR NOTE: Mounting it on its side is the best solution, in case you want to mount a later board on top of the 2nd board (i.e. TNC-95, ethernet, etc). Some of the Xtals shipped had long leads and some didn't.

* Power Plug Install on line from transformer
I would suggest using some heat shrink when attaching the new plug to the power adapter cable. The stranded wire is large so you may want to remove a few strands to fit the center connector tab. You might also want to use tape or heat shrink for strain relief. (Bob KC5EJK)

Ron W5RKN

also:
w5rkn@amsat.org

Ron W5RKN

also:
w5rkn@amsat.org

183. DEBUG

From: mccannm@erie.gov (Michael J. McCann)
Date: Wed, 25 Jan 95 08:45:46 EST
To: dsp-93@tapr.org
Message-ID: <9501251345.AA04611@erie.gov>
Rendered body type: text/plain

This is the program I wrote to test the DEBUG routine. One time in three, when I run this program I get no output when I enter PROCOMM. If I back out of PROCOMM and restart I get the DEBUG routine's output. My guess is that if the CPU does not catch the RS-232 control signal transition DEBUG assumes that the terminal is not ready and continues to wait for the signal transition.

```
.NOLIST
.INCLUDE      "MONITOR.INC"
.INCLUDE      "REGS.INC"
.LIST
.ORG          1000H
B              ISR
B              ISR
B              ISR
B              ISR
START  LDPK          08H          ; SELECT PAGE 8
                                ; ZERO ACCUMULATOR
      ZAC
      SACL          DEBUGPC      ; ALWAYS TRAP
      SACL          DEBUGML      ; DUMP FROM LOCATION ZERO
      LRLK          AR1,0000H    ; ZERO AR1
      LARP          1            ; SELECT AR1
      LDPK          00H
LOOP   CALL          DEBUG      ; DISPLAY REGISTERS
      ADRK          1            ; INCREMENT AR1
      B              LOOP       ; CONTINUE

; DUMMY INTERRUPT SERVICE ROUTINE

ISR     EINT                    ; ENABLE INTERRUPTS
      RET                      ; EXIT ISR
      .END
```

73s
Mike McCann, KB2FMG

184. Re: [DSP-93:226] DEBUG

From: rparsons@bga.com (Ronald G. Parsons)
Date: Wed, 25 Jan 1995 09:34:35 -0600
To: dsp-93@tapr.org
Message-ID: <ab4c1e220402100443ad@[204.96.0.102]>
Rendered body type: text/plain

Mike,

I assembled this program and ran it over and over, both on the Mac using DSP-93Control and under Windows using D93WE. NEVER had a problem. I don't have PROCOMM. Perhaps someone here with PROCOMM can test this for you.

Sounds like an RS-232 problem on your end.

Ron

>This is the program I wrote to test the DEBUG routine. One time in three,
>when I run this program I get no output when I enter PROCOMM. If I back out
>of PROCOMM and restart I get the DEBUG routine's output. My guess is that if
>the CPU does not catch the RS-232 control signal transition DEBUG assumes that
>the terminal is not ready and continues to wait for the signal transition.

```
>  
>                .NOLIST  
>                .INCLUDE      "MONITOR.INC"  
>                .INCLUDE      "REGS.INC"  
>                .LIST  
>                .ORG          1000H  
>                B             ISR  
>                B             ISR  
>                B             ISR  
>                B             ISR  
>START    LDPK      08H             ; SELECT PAGE 8  
>                ZAC             ; ZERO  
>ACCUMULATOR  
>                SACL          DEBUGPC      ; ALWAYS TRAP  
>                SACL          DEBUGML      ; DUMP FROM LOCATION ZERO  
>                LRLK          AR1,0000H    ; ZERO AR1  
>                LARP          1            ; SELECT AR1  
>                LDPK          00H  
>LOOP     CALL     DEBUG            ; DISPLAY REGISTERS  
>                ADRK          1            ; INCREMENT AR1  
>                B             LOOP        ; CONTINUE  
>  
>; DUMMY INTERRUPT SERVICE ROUTINE  
>  
>ISR      EINT             ; ENABLE INTERRUPTS  
>                RET             ; EXIT ISR  
>                .END  
>  
>73s  
>Mike McCann, KB2FMG
```

Ron W5RKN

also:
w5rkn@amsat.org

185. Re: [DSP-93:226] DEBUG

From: Roy Welch <rdw@crl.com>
Date: Wed, 25 Jan 1995 07:33:37 -0800 (PST)
To: dsp-93@tapr.org
Cc: dsp-93@tapr.org
Message-ID: <Pine.SUN.3.91.950125072926.5353H-100000@crl8.crl.com>
Rendered body type: text/plain

On Wed, 25 Jan 1995, Michael J. McCann wrote:

> This is the program I wrote to test the DEBUG routine. One time in three,
> when I run this program I get no output when I enter PROCOMM. If I back out
> of PROCOMM and restart I get the DEBUG routine's output. My guess is that if
> the CPU does not catch the RS-232 control signal transition DEBUG assumes that
> the terminal is not ready and continues to wait for the signal transition.

Mike, I had trouble similar to yours and it turned out to be the ProComm settings. Be sure XOFF/XON and RTS/CST are disabled. Also be sure that in the Protocol Options that "Abort transfer if CD lost" is set to NO. This is the only way I could transfer Raw ASCII into ProComm. You might also try the Windows Terminal program as a double check.

73, Roy -- W0SL

186. Re: [DSP-93] AIO:

From: rparsons@bga.com (Ronald G. Parsons)
Date: Wed, 25 Jan 1995 10:32:01 -0600
To: "H.-J. Knobloch" <hjk@dtro.e-technik.th-darmstadt.de>
Cc: dsp-93@tapr.org
Message-ID: <ab4c287f06021004b32e@[204.96.0.102]>
Rendered body type: text/plain

Dietmar, my comments are surrounded by ----- so you can find them.

Ron


```

>From: Dietmar Grossmann DJ4RX @ DB0GE.#SAR.DEU.EURO
>To: rparsons@bga.com
>Subject: [DSP-93] AI0:
>
>Diagrams, Analog Interface [3 of 5]
>
>1. Pin numbering of IO201 & IO202 is wrong, see DSP-93 Assembly Manual
>   p.33. Also, some signal names are different.
>
>2. R215 & R216 are both 25K, not 1K and 50K resp.
>
>3. There is only one Analog Output, however, U203, IN_5 & IN_7 are
>   n o t tied together, but connect to the hot ends of R214 & R213 resp.
>-----
You are correct. Thesed have been corrected on the updated schematics (to
be distributed later.
>-----

>Having successfully completed the digital tests I was looking for some
>procedures for the AI0.
>Supply voltages measured with a Fluke 77 multimeter were
>+5 Digital: +5.00 v., +5 Analog: +4.91 v. (from +9.20 v at the 78L04
>input), -5 Analog: -4.99 v.
>
>The Oscilloscope program seems to be a good choice to perform further
>self tests of the A/D chain.
>
>For measuring the 9 v.a.c. which go into P203 you need a voltage divider
>made up of one 1K resistor which fits into pos. 6 and 3 of IO201 (Radio1)
>(The wires of a 1/4 w. resistor have about the same size as the pins of
>the mini DIN plugs.) Solder abt. 5" of wire to the "hot" i.e. pin-3-end
>of the 1K resistor and a 36K resistor at the other end of the 5"-wire.
>The free end of the 36K resistor is now "plugged" into pos. 2 of JP205.
>
>Set up the Oscilloscope with Sweep: 5 ms/div, Vertical: 0.8 v/div,
>Port: Aux1.
>
>The positive half wave will be abt. 1.5 div peak, the negative abt.
>1.9 div. which makes sense sinse there is a heavier load on +5 volts
>than on -5.
>Conclusion: The A/D converter seems to work, oscillograms are
>approximately twice the size expected.
>A.C. voltages as measured with the Fluke 77:
>
>  U203, pins 4, 8      = 0.263 v.r.m.s.
>  U202, pins 3, 2      = 0.263
>    pins 1, 5, 6, 7 = 2.07      } looks like gain 8.
>  X0      pins 1, 5, 6, 7 = 2.07      }
>
>-----
Sounds good. Remember, the calibration of the scope is dependent on the
position of the input gain pots (R215 and R216). Thus the gain setting is a
relative measure.
>-----

>Do leave "Auto Trigger" switched on while changing Ports, otherwise
>the Oscilloscope program will enter a bad state where clicking the
>Port button will have only an effect on the screen, but not translate
>into changes of the address lines of A2, A1, and A0 of U203 (!).
>With "Auto Trigger" left On clicking the Exit button will also reset
>the DSP-93, while after Exit with "Auto Trigger" Off the DSP-93 must
>be reset manually. This is an error in the Oscilloscope program(s).
>-----
I believe what you are seeing here is with Auto Trigger off, the scope
program (in the DSP-93) has been told to wait (forever, if necessary) for a
signal exceeding the trigger level. Thus until such a trigger occurs, it
will wait ... and wait ... . I'll pass this on the the developer.
>-----

>The TLC2272s are very sensitive OpAmps. If the noninverting input
>(pin 3) is left floating, the smallest leakage current will drive
>the device into saturation, and because the negative supply (pin 4)
>is close, the output will quickly drift to the negative supply
>voltage.
>Verify this effect by "plugging" a 1Meg resistor into pos. 3 & 6 of
>IO202 (AuxIn & GND of Radio2). When switching Ports, Aux2 will now
>stay at zero level while Aux1 when left unconnected will drift to the

```

```

>bottom of the display.
>There is a little hum on Aux2 owing to its vicinity to the power
> supply lines.
>
>Other voltages to monitor are the unregulated + and - 9 to 12 VDC
>on pins 1 and 2 of P202. (Short JP209 if you want to preserve the
>DC component.)
>
>
>The asymmetric loading and clipping effects on the 9 VAC power supply
>voltage also make it quite a nice demonstration example of the
>Spectrum Analyzer.
>
>Setup proposed is Sweep: 78 Hz/div, Recurrent, Persistence: Integrate,
>          Vertical: 0.2 v/div, Linear or Log Amplitude.
>
>-----
There are lots of interesting things to look at with the spectrum analyzer.
Packet (1200 bps), DTMF tones, etc.
-----

>While talking about waveforms, I am a little bit concerned about the
>outputs of Tests 5 and 6, TESTRAMP and TESTBUZZ.
>Measurements made with a Kikusui COS6150 at Radio1 pin 5 (TD-Audio)
>showed a considerable amount of ringing/overshoot.
>Somewhere, there seems to be a resonance around 6 kHz which could
>explain that an analog G3RUH modem was performing better than the
>DSP-93 in FSK as reported by one of the testers.
>There will be a remedy for that I hope ...
-----
The ringing you are describing is on the output. I believe the G3RUH
comparison was on reception.
-----

>Apart from that, on top of my wishlist for the less experienced
>builder are more consistent signal and pin names which at present
>still exhibit how many people have contributed to this fascinating
>project.
-----
PLEASE, feel free to join in the efforts to write operations and interface
documentation. I believe you could contribute a lot. Thanks.
-----

>Dietmar DJ4RX
>

Ron W5RKN

also:
w5rkn@amsat.org

```

187. Resend - Forgot to sign ..

```

From: crohrer@VNET.IBM.COM
Date: Wed, 25 Jan 95 10:35:54 CST
To: dsp-93@TAPR.ORG
Message-ID: <m0rXAma-0000heC@dptspd.sat.datapoint.com>
Rendered body type: text/plain

```

Apologies, I forgot to sign my note of yesterday (attached below).

Best 73's, Clem -NR3U

```

=====
The build is complete and, thanks to your E-MAIL notes the unit powered up
and passed all tests on the first try. Nice unit, the team did a great job
in design. Many Thanks to you all!
Now on a slightly negative line: As I reviewed the last pages of the built
document, I felt as if I was slipping off a cliff, or more exactly, as if
I was using a manual from Pac-Comm. Things just ENDED. I was left with two
diskettes, a schematic, and I'm sure tons of details buried therein that
will raise more questions than provide answers needed at this stage. I'm an
experienced 9600 baud and 1200 baud PSK satellite user, so I'm well aware
of hookup requirements such as radios and TNC, but gosh if I was a bit of a
novice I would be way out in left field at this stage of the project. In a
word LOST. For example I remember soldering in headers that may need jumpers,
how do I handle that? Additionally should I use firmware or DSPLOAD OBJs for
operating software and which is most current and/or recommended for my initial
use, etc, etc .. I would suggest that to support the least of us out here, that
you lead us into the lowest common denominator of packet operations, that is
1200 baud standard terrestrial packet. Devote a page or two at the end of the

```

build manual focusing on each step required. Ex: Should the attached TNC have the DCD STATE function, how/where do I adjust TX Deviation, what jumpers, how many RS232 cables to the computer and when, what lights should blink on the DSP-93, what program in the DSP-93 and what will it expect from my application? Most likely this is beyond the scope of the project, but I believe an effort to demonstrate 'user friendliness' will greatly enhance DSP-93 acceptance.

188. Re: [DSP-93:227] Re: DEBUG

From: mccannm@erie.gov (Michael J. McCann)
Date: Wed, 25 Jan 95 11:45:46 EST
To: dsp-93@tapr.org
Message-ID: <9501251645.AA05183@erie.gov>
Rendered body type: text/plain

```
> Mike,
>
> I assembled this program and ran it over and over, both on the Mac using
> DSP-93Control and under Windows using D93WE. NEVER had a problem. I don't
> have PROCOMM. Perhaps someone here with PROCOMM can test this for you.
>
> Sounds like an RS-232 problem on your end.
>
> Ron
>
> >This is the program I wrote to test the DEBUG routine. One time in three,
> >when I run this program I get no output when I enter PROCOMM. If I back out
> >of PROCOMM and restart I get the DEBUG routine's output. My guess is that if
> >the CPU does not catch the RS-232 control signal transition DEBUG assumes
that
> >the terminal is not ready and continues to wait for the signal transition.
> >
> >
> >          .NOLIST
> >          .INCLUDE      "MONITOR.INC"
> >          .INCLUDE      "REGS.INC"
> >          .LIST
> >          .ORG          1000H
> >          B             ISR
> >          B             ISR
> >          B             ISR
> >          B             ISR
> >START   LDPK          08H             ; SELECT PAGE 8
> >          ZAC                      ; ZERO
> >ACCUMULATOR
> >          SACL          DEBUGPC      ; ALWAYS TRAP
> >          SACL          DEBUGML      ; DUMP FROM LOCATION ZERO
> >          LRLK          AR1,0000H    ; ZERO AR1
> >          LARP          1            ; SELECT AR1
> >          LDPK          00H
> >LOOP    CALL          DEBUG          ; DISPLAY REGISTERS
> >          ADRK          1            ; INCREMENT AR1
> >          B             LOOP        ; CONTINUE
> >; DUMMY INTERRUPT SERVICE ROUTINE
> >
> >ISR          EINT                      ; ENABLE INTERRUPTS
> >          RET                      ; EXIT ISR
> >          .END
> >
> >73s
> >Mike McCann, KB2FMG
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
> Ron
```

Thanks for testing my program. Do you know if the software you are using drops RTS and DTR when you exit, or are the control signals up all of the time? I am going to test the program with a different computer, and with a different communications program. I'll let you know what I find out.

73s
Mike McCann, KB2FMG

189. Re: [DSP-93:231] Re: DEBUG

From: rparsons@bga.com (Ronald G. Parsons)
Date: Wed, 25 Jan 1995 12:51:05 -0600
To: dsp-93@tapr.org
Message-ID: <ab4c4d5c000210045c4c@[204.96.0.169]>
Rendered body type: text/plain

>Thanks for testing my program. Do you know if the software you are using
>drops RTS and DTR when you exit, or are the control signals up all of the time?
>I am going to test the program with a different computer, and with a different
>communications program. I'll let you know what I find out.
>73s
>Mike McCann, KB2FMG

I didn't exit the program between invocations of the program. Both
DSP-93Control and D93WE contain downloading facilities to the DSP-93 and
terminal emulators.

Try one of these programs if you have a Mac or Windows.

Ron W5RKN

also:
w5rkn@amsat.org

190. VIDEO DISPLAY

From: wtb@partyline.org
Date: Wed, 25 Jan 95 13:43:13
To: dsp-93@tapr.org
Message-ID: <9501251343.0J9W800@partyline.org>
Rendered body type: text/plain

how can i drive my hercules mono display from the dsp93 scope and
spectrum analyzer software?? i have borlands herc.bgi and hercules
GraphX code but dont know how to incorporate with dsp-93.
need any advice on the best tnc to use with dsp-93 for satellite
and HF/VHF/UHF packet.
reply wtb@partyline.org bill N0LIK

191. Re: Scope program error(?)

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)
Date: Wed, 25 Jan 95 14:03:39 CST
To: dsp-93@tapr.org
Message-ID: <9501252003.AA07915@eagle.aud.alcatel.com>
Rendered body type: text/plain

> Received the following from Dietmar DJ4RX.
>
> >Do leave "Auto Trigger" switched on while changing Ports, otherwise
> >the Oscilloscope program will enter a bad state where clicking the
> >Port button will have only an effect on the screen, but not translate
> >into changes of the address lines of A2, A1, and A0 of U203 (!).
> >With "Auto Trigger" left On clicking the Exit button will also reset
> >the DSP-93, while after Exit with "Auto Trigger" Off the DSP-93 must
> >be reset manually. This is an error in the Oscilloscope program(s).
> -----
> I believe what you are seeing here is with Auto Trigger off, the scope
> program (in the DSP-93) has been told to wait (forever, if necessary) for a
> signal exceeding the trigger level. Thus until such a trigger occurs, it
> will wait ... and wait I'll pass this on the the developer.
> -----
>
> Ron W5RKN
>
>

Ron is correct in his statement, and the help file warns about
turning off auto-trigger. When auto-trigger is turned off, the scope
program ignores all else until the trigger condition is met, or the reset
button is pushed. If you inadvertently lock it up, then you should hit
reset -- it's by far the easiest solution. There is no easy solution to
the requirement: 'auto-trigger-off, unless I change my mind'.

- Tom, N5EG

192. Re: [DSP-93:230] Resend - Forgot to sign ..

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 25 Jan 1995 12:32:08 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501251832.MAA08885@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi Clem,

The 'Operations Guide' was on the list and still is on the list to be completed and made available, but at somepoint we just ran out of time to get everything we would have liked to have with the unit. One of those things when you have volunteers doing this type pf project.

As Ron just posted in his update message:

----- HERE'S YOUR CHANCE TO HELP THE GROUP -----

As you interface your DSP-93 to your radio, etc., how about writing up your experiences, procedures, problems, etc. Post your results and we'll collect them.

What would you like to see in an operations manual? Let me know and I'll sign you up for a section or two.

So - sign up now all you future volunteers. As Celm points out, a operations guide is needed to really complete the unit for those that will follow.

Cheers - Greg, WD5IVD

193. uhh, hullo??

From: kalkjz@tigger.jvnc.net (Ron Barnes)
Date: Wed, 25 Jan 1995 17:33:39 -0500
To: dsp-93@tapr.org
Message-ID: <199501252236.AA29988@tigger.jvnc.net>
Rendered body type: text/plain

I am going to try this one last time, I cannot understand for the life of me why my message has gone unanswered. Not even a "beats me" response. As it stands I have a \$450 pile of useless hardware sitting in front of me, hence my tone...

Here is the message I posted on Sunday, then re-posted on Monday...

Well, I will try this again, seems my last messages have the list stumped...

>To help us help you, could you give a little more info.
>
>What tests have you run succesfully? Unsuccessfully/
>

Monitor test, Speed Test, Memory Test and Testleds all work very successsfully. As soon as I get to the test routines for the DAC, thats where it fails.

>At what points are you looking for an output signal?
>

Checked pin 22 and 21 (Output + and -) and there was no life (some low level noise maybe) then tracing back, no serial data on DX, traced that back to pin 10 of interboard connector JP202, still no life. Traced that back to pin 54 of the TMS320C25 and still no life. Cannot directly probe the chip while operating as there is no extender for this kind of a board setup. So, up to the socket pin there is no life on DX while operating. So, ok, maybe a bad socket? Nope, continuity test confirms a good contact between the TMS320C25 and pin 10 of JP102.

>Are you saying there is NO signal on DX?
>

Nope, none, nada. Stays in a low condition. Thought for the heck of it, pulled it high and it goes high, pulled it low, and well, no change (10K ohm to Vcc and Vss). This tells me its staying in a Hi-Z state.

>What do you mean by "testbuzz (downloaded versions)". Are you not using the
>OBJ files on the diskettes?
>

I mean downloaded versions as the .OBJ files on the disk (forgive me it was 12am when I wrote that), as they have to be downloaded to the DSP-93, as opposed to the versions on the EPROM (those dont work either).

A Very Dissatisfied DSP-93 Customer

```
--
*****
** Ronald C. Barnes - KA1KJZ          Broadcast Engineer, WTXN-TV      **
**                               ARRL CT Section Technical Specialist  **
** internet: kalkjz@tigger.jvnc.net  Member, Society of Broadcast Engineers **
** packet : kalkjz@n4gaa.ct.usa.na   Member, IEEE                      **
**                               **                                     **
** Ask me about my TAPR DSP-93, it makes a good story                 **
*****
```

194. Re: [DSP-93:203] Re: No life from the output(s)

From: Bob Stricklin <bstrick@tenet.edu>
Date: Wed, 25 Jan 1995 22:08:56 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501260408.WAA01701@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

According to Ron Barnes:

Ron Barnes, I have been tied down with work and computer problems here but will try to work with you over the next few days to sort out your DSP-93 problem. That is if you have not solved the problem already.

To start would you confirm that pin 2 of U208, the AIO, is low after a reset. Then download a program which uses the AIO and make sure that pin 2 goes high. Let me know what you find here.

Bob Stricklin, N5BRG

195. Re: [DSP-93:206] Documentation scrutiny

From: Bob Stricklin <bstrick@tenet.edu>
Date: Wed, 25 Jan 1995 22:58:50 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501260458.WAA07376@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

According to Mills@huey.udel.edu:

```
>
> Digital 1
>
> There is something going on near pins 56 (XF) and 51 (X1) of U101
> (TMS320C25). I assume the classified monitor code uses the external flag
> XF to enable/disable the EPROMS (U101, U102) and SRAMS (U104-U105) when
> switching between monitor mode and user mode. If that is the case, the
> NC next to the meatball near pin 56 is irrelevant and should be erased
> along with the X2 label beneath X1 near the left margin.
>
```

Corrections made in schematics. NCs should be removed.
X2 label also.

```
> Part of the fun in this exercise is trying to reverse engineer the
> implementor's minds on how they assume the various jumpers should be
> used. The watchdog jumpers J103 fit in this category. If a jumper is set
> on pin 1, I assume the intent is that the EPROM chip enable line barks
> the dog; if it is set on pin 2, I assume the Q3 output from PAL U112
> wags its tail. As no PAL equations are provided, I have no idea what PAL
> terms define the breed.
```

WDT will work with either of the mentioned points being jumpered on J103. Q3 I will post the required IO information and a sample of code when a real application of WDT comes up.

```
>
> I have a dim memory from testing that I could find no -5V voltages
> perched on pins 45 and 46 of connector J102. I did find the +5V
> voltages.
>0
```

The +5 voltage is a digital voltage. We have no +5 analog or -5 analog supply voltages going to digital board of connectors to reduce the possibility of noise finding it way into these lines.

```
> It would be nice to know what logic terms kick the SPEED SEL line from
```

```

> PAL U113.
>
XF switches speed and between EPORM and RAM chips.
You can not switch speed without jumping back into EPROM space. You could do
it if you run out of on chip memory in the DSP chip. I will leave that for
you to figure out if you want to do it.

>0 The INT0 interrupt line comes from pin 20 on the TMS320 (U101) and
> wanders in the bus near PAL U113, but doesn't seem to come out anywhere.
> My guess is that some hidden PAL output toggles it for what might be a
> real interesting reason.
>
I do not recall this and would have to review the board to see what you are
talking about.

> I have a lot of trouble with JP103, being apparently used to twitch lots
> of miscellaneous bits between the boards. On Digital 1, the PAL outputs
> are labelled Q3-Q10. Making a list of the correspondences on Board 2, I
> get
>
> Pin   Label      Function
>
> 1     +5V
> 3     +5V
> 5     Q3          watchdog muzzle
> 7     Q4          TNC input strobe to buffer U213
> 9     Q5          G (gate) pin 19 of transceiver U216
> 11    Q6          \DOSTR pin 18 of UART U212
> 13    Q7          TNC output clock to latch U214
> 15    Q8          \DISTR pin 21 of UART U212
> 17    Q9 *        Analog 3 shows this as clock input to latch U206;
>                      Analog 4 shows this as \ADS pin 25 of UART U212
> 19    Q10 *       Analog 1 shows this goes to PAL U210 pins 1 and 19;
>                      Analog 3 shows this as clock input to latch U204
>
> 2     GND
> 4     GND
> 6
> 8
> 10
> 12
> 14
> 16    AIO input, buffered; also appears at X0
> 18
> 20
>
> * Obviously, there are some conflicts in the schematic.
I have been trying to clean up problems in schematics. Will review your
comments to see if anything I missed here. Some of the lines you have
referenced are used for more than one task. All of the things listed are not
problems.

>
> Digital 2
>
> The RESET button and R105 should be interchanged; in fact, the RESET
> button is on the analog board connected by a interboard pin. Big deal.
> As per electric messages, U116 pin 8 is grounded for at least those of
> us that have the deprecated version of that part.
>
Corrected in schematic update.

> Digital 3
>
> Capacitor schematic errors corrected as per electric messages.
>
Corrected in schematic update.

> Analog 1
>
> Are diodes D201 and D202 actually wired according to the schematic? See
> Page 5-102 in the TI Linear Circuits Data Book. I'm not sure in the
> configuration shown that latchup can always be prevented, should the
> analog voltages come up out of order.
>
I have another data sheet recommending the connection as shown in the
schematic. It may be improved to make the change as shown in the referenced
page. Would need more study. Latchup is prevented by holding the AIO in reset
during power up however. If you look at pin two on the AIO you will see it

```

stays at ground until the AIO is needed. Also allows user to reset the AIO when he want to program it.

> It is reported R224 and capacitor C207 bite the dust. I feel better. I
> take it the WB SEL (JP205) is intended to operate the AIO chip in byte
> mode, rather than word mode. I can't imagine anybody wanting to do that,
> but it's nice the implementors thought of it. Pin 1 on the TLC32044 in
> the parts list and on my board is not used; on the TLC32047 OPTIONAL
> (sic) mentioned in the diagram, it is used for a special telephone mode.
> I take it the fancy footwork is so that either part will work.
>

You are mostly correct here. You can use the '44 or '47 chip. '44 is used because of its wider ranger of sampling ability.

>O The power supply voltages shown on JP102 on Digital 1 do not appear on
> JP202 on Analog 1.

>
Will have a look at this.

> I'm confused on the role of INT1 with respect to the AIO and UART. In
> principle, there are four interrupts involved, an input and output
> interrupt for each of these two devices, but only INT1 from pin 18 on
> PAL U210 appears. I take it the monitor snags the interrupts and
> software multiplexes it? If so, then I assume the UART would use INT2,
> but that doesn't appear to be used anywhere. The 8250 SIO INT (sic) line
> does land on pin 13 of PAL U210, which is even more interesting.
>

UART does use INT2 and PAL U210 is used to invert the signal to get the logic to match up.

> Analog 2

>
> P205 seems nowhere to be found. Is this really P204 in disguise?

>
> Analog 3

>
> JP207 is really JP212. I take it JP211, JP212, JP208, JP210 and JP209
> are present in order to make this thing DC-coupled, which tickles me
> pink.

>
You got it.

> Analog 4

>
> JP204 lights CD pin 38 on UART U212. Usually, I assume, the attached
> computer will light DTR (P201 pin 4), which satisfies that craving. I
> sure like the idea of craving jumpers so that the unit can be operated
> with only data leads and avoid violations of the Principle of Least
> Astonishment, should that be necessary.
>

> Analog 5

>
> Are pins 3 and 4 of external power P202 reversed? If so, consider what
> might happen should somebody wire a mating connector like that.

>
> I take it JP207 is used to enable UART interrupts. I may hanker for use
> of the UART with interrupts in user code; however, the monitor
> apparently doesn't use UART interrupts and doesn't provide a hook via
> the transfer vector in the user program. It would be very useful to do
> this, for instance to alter parameters on-the-fly while the beast is
> running and doing useful things.

You correct. That is why I have put this ability in the board. Why do you develop some interrupt driven routines and post them for us.
One of the many things I have not had time to work on yet.

>
> Epilog

>
> In spite of the above, this thing went together real slick. The bug rate
> is far below the foo-paws of my own boards first out the gate. I will
> report other bugs as found; but, whattheheck, I haven't even got the
> thing going yet.
>

You may have found them all! I hope so anyway.

Bob Stricklin, N5BRG

196. Re: [DSP-93:204] Hot bits in U102 EPROM

From: Bob Stricklin <bstrick@tenet.edu>
Date: Wed, 25 Jan 1995 23:01:20 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501260501.XAA07623@Leslie-Francis.tenet.edu>
Rendered body type: text/plain

According to Mills@huey.udel.edu:

>
> Folks,
>
> With a solid 9-V AC supply and U116 fix, I get signs of life from the
> rascal, including address bus and data bus high byte; however, the
> data bus low byte (all bits) sticks at high, regardless of the state
> of the output enable line. The hot bits cool to zeros when U102 is
> removed, from which I conclude that U102 is defective. Needless to say,
> the thing doesn't come up, even though I checked the signals right at
> the 16550 pins 10 and 11. Can I snatch a replacement?
>
> Dave
> w3hcf
Please post you mailing address and I will send you a new set of EPROMs if
the TAPR office has not already done so.

Bob Stricklin, N5BRG

>

197. RTTY software

From: rparsons@bga.com (Ronald G. Parsons)
Date: Thu, 26 Jan 1995 12:23:23 -0600
To: dsp-93@tapr.org
Message-ID: <ab4d983b01021004193d@[204.96.0.140]>
Rendered body type: text/plain

I received the following query on U0-22 from Karl DL3DA in Goettingen.

> Would like to try it on short wave first. Now my question: Does there
> exist any software for RTTY/AMTOR? With the utilities I found a remark from
> KC7WW. He seems to use the DSK-26 from TI. He mentioned also the DSP-93,
> but the only info is 'please contact TAPR'.

73, Karl DL3DA in Goettingen

Is anyone working on such software for the DSP-93?

Ron W5RKN

also:
w5rkn@amsat.org

198. Re: [DSP-93:236] uhh, hullo??

From: creek!hammond@camel.campbell.edu (Mark L. Hammond)
Date: Fri, 27 Jan 1995 01:25:54 +0000 (GMT)
To: camel!tapr.org!dsp-93
Message-ID: <m0rXfRj-000058C@creek.uucp>
Rendered body type: text/plain

Beats me

--

Mark L. Hammond [KC4EBR] -- Proud TAPR/AMSAT DSP-93 Beta Tester --

199. DSP-93. Good one

From: Geoff Chapman <moose@triode.apana.org.au>
Date: Fri, 27 Jan 1995 11:09:51 +0100
To: tapr1 <dsp-93@tapr.org>
Message-ID: <Pine.3.89.9501271153.A14695-0100000@triode>
Rendered body type: text/plain

Congratulations to the TAPR - AMSAT team for an excellent kit. No
missing or incorrect parts, and the assembly immediately came up OK on the
operational tests. I believe the invaluable Internet feedback played a large
part in this!

Now for one or two comments:

- 1) re Jan 16 1955 UPDATE
* PIN3 on DSP-93 TNC not at 5V

suggest that U113 & U114 should be U213 & U214 (Schematic AI0: sh 4 of 5)

- 2) re Assembly Manual P30 Col 1 para 7.

This statement is true only if looking at the chip from UNDERSIDE! Either change 'lower right' to lower left, and 'upper left' to upper right, or revert to pinout descriptions. (ground on end pin 7 or 8, Vcc on end pin 14 or 16).

- 3) I was surprised at how hot the heatsinks got, but the 11/12 VDC I measured at the input to the regulators explained it!

My Xformer has multiple taps, and I found that 7.5VAC still gave me nearly 9V DC to the regulator. The heatsinks run comfortably warm at this setting.

73 Geoff VK2AIT

200. Re: [DSP-93:233] VIDEO DISPLAY

From: rparsons@bga.com (Ronald G. Parsons)
Date: Thu, 26 Jan 1995 20:18:09 -0600
To: dsp-93@tapr.org
Message-ID: <ab4e054302021004362f@[204.96.0.144]>
Rendered body type: text/plain

>how can i drive my hercules mono display from the dsp93 scope and
>spectrum analyzer software?? i have borlands herc.bgi and hercules
>GraphX code but dont know how to incorporate with dsp-93.
>need any advice on the best tnc to use with dsp-93 for satellite
>and HF/VHF/UHF packet.
>reply wtb@partyline.org bill NØLIK

The DSP-93 Scope and Spectrun Analyzer software transferrs a string of bytes out the serial port. It produces no video. There are two programs provided to display these data - D93WE for Windows and DSP-93Control for the Mac.

Perhaps I do not understand how you wanted to use the scope with your graphics cards.

As far as the TNC, just about any TNC with a TAPR standard "modem disconnect header" will work. I use an MFJ 1270B because I had one.

Ron W5RKN

also:
w5rkn@amsat.org

201. Re: [DSP-93:236] uhh, hullo??

From: rparsons@bga.com (Ronald G. Parsons)
Date: Thu, 26 Jan 1995 20:18:12 -0600
To: dsp-93@tapr.org
Message-ID: <ab4e0668030210047ac6@[204.96.0.144]>
Rendered body type: text/plain

Ron Barnes.

>I am going to try this one last time, I cannot understand for the life of me
>why my message has gone unanswered. Not even a "beats me" response. As it
>stands I have a \$450 pile of useless hardware sitting in front of me, hence
>my tone...

You need to be a little patient in getting support. Remember, I (and all the others) do this out of the kindness of our hearts. We are all volunteering our time and effort.

I responded IMMEDIATELY to your first plea for help, asking for more information. But my knowledge is more on the software side. Bob (who replied to you today) had computer problems and replied as soon as he could.

Be patient with us and we'll be patient with you.

Ron W5RKN

also:
w5rkn@amsat.org

202. Re: [DSP-93:233] VIDEO DISPLAY

From: Bob Stricklin <bstrick@tenet.edu>
Date: Thu, 26 Jan 1995 20:46:30 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501270246.UAA24110@Gayle-Gaston.tenet.edu>
Rendered body type: text/plain

According to wtb@partyline.org:

>
>
> how can i drive my hercules mono display from the dsp93 scope and
> spectrum analyzer software?? i have borlands herc.bgi and hercules
> GraphX code but dont know how to incorporate with dsp-93.
> need any advice on the best tnc to use with dsp-93 for satellite
> and HF/VHF/UHF packet.
> reply wtb@partyline.org bill NØLIK

Bill the software which runs the scope and spectrum analyzer only works with windows. Are you able to run windows with your monitor? If you can you may not be satisfied with the mono display. Not sure how the trace color will work out. I have run windows on a mono display so I think you can do it.

If you do not have windows I suggest you find a friend that does and just take a look at the Windows software. Then decide if it is worth the trouble to upgrade your computer. I know it is a lot of bucks and some effort to learn. I feel it worth the effort.

Bob Stricklin, N5BRG

>

203. Re: [DSP-93:240] RTTY software

From: Greg Jones <gjones@tenet.edu>
Date: Thu, 26 Jan 1995 22:05:11 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501270405.WAA11366@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Hi Ron, I believe we should have the RTTY/AMTOR/PCTOR modem in the next release....but hta is up to Frank Perkins. I believe it is completed, but just didn't make this release.

In this way you can use Johan's code with the DSP-93. In addition, TAPR has a simple HF modem, designed by Johan, called the AN-93 which does just RTTY/AMTOR/PCTOR.

I don't remember the last word on the HF Modem...maybe Frank can comment.

Greg

According to Ronald G. Parsons:

```
>
> I received the following query on UO-22 from Karl DL3DA in Goettingen.
>
> > Would like to try it on short wave first. Now my question: Does there
> > exist any software for RTTY/AMTOR? With the utilities I found a remark from
> > KC7WW. He seems to use the DSK-26 from TI. He mentioned also the DSP-93,
> > but the only info is 'please contact TAPR'.
>
> 73, Karl DL3DA in Goettingen
>
> Is anyone working on such software for the DSP-93?
>
>
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>
```

204. Build Update 1/27/95

From: rparsons@bga.com (Ronald G. Parsons)
Date: Thu, 26 Jan 1995 22:17:47 -0600
To: dsp-93@tapr.org
Message-ID: <ab4e22402021004feda@[204.96.0.110]>
Rendered body type: text/plain

DSP-93 Build Suggestions
December '94 Production

Updated: 1/27/95

We will try to update this message as the build happens and post it so ever so often.

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', Subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94).

January 27th, 1995 Update Section

==== WARNING =====
==== WARNING =====

We have discovered an error in the port initialization code.

This is the procedure that initializes PTT and FREQ UP/DOWN at reset and power-on times.

It turns out that PTT Port 1 ALWAYS initializes high.
PTT Port 2 and both UP/DOWN lines initialize "backwards", i.e., when you strap the their initialization lines (DSP-93 TNC pins 7, 16, 18) low, the corresponding port initializes high, and vice versa.

Please be careful as this could cause your transmitter to key unexpectedly.

==== WARNING =====
==== WARNING =====

[The following is repeated because of a typo which referred to U113 and U114]
* Pin 3 on DSP-93 TNC not at 5V
A pullup resistor was left off the DSP-93 Board 2 to pullup pin 3 on the TNC connector (between U213 and U214). A solution is to solder a resistor (about 10k ohms) on the bottom of Board 2 between pin 3 of the TNC connector and U113 pin 20 (+5V). Be careful not to short either lead to any uninsulated point on the bottom of the board.

----- HERE'S YOUR CHANCE TO HELP THE GROUP -----

As you interface your DSP-93 to your radio, etc., how about writing up your experiences, procedures, problems, etc. Post your results and we'll collect them.

What would you like to see in an operations manual? Let me know and I'll sign you up for a section or two.

January 25th, 1995 Update Section

The references to R214 and R215 in FSK.DOC, PKT.DOC and TESTXXXX.DOC are reversed. R215 (and R216) affects the input gain while R214 (and R213) affects the output signal.

The connector referred to as J203 in TEXTXXXX.DOC actually refers to JP203.

The test point labeled -9V will have closer to -13V on it.

January 16th, 1995 Update Section

* Pin 3 on DSP-93 TNC not at 5V

A pullup resistor was left off the DSP-93 Board 2 to pullup pin 3 on the TNC connector (between U213 and U214). A solution is to solder a resistor (about 10k ohms) on the bottom of Board 2 between pin 3 of the TNC connector and U113 pin 20 (+5V). Be careful not to short either lead to any uninsulated point on the bottom of the board.

* Power on and off caution

It is also important to note that the DSP-93 (as well as most other radio modems) may cause your transmitter to go into transmit mode briefly when the DSP-93 is powered on and/or powered off. This can occur even if the initializations lines referred to in the "Radio Port Configuration Notice" are properly configured. Take precautions so that your equipment will not be damaged if this should occur.

* Another solution to the Icom up/down tuning line

As mentioned on pages 14 and 33 of the Assembly Manual, you were given a work around for the Icom up/down tuning line by placing the resistors in the cable to an Icom radio. If you will need this tuning arrangement, another solution is to solder resistors R220 and R223 on to the bottom of Board 2. Solder one of the resistors between the square pad of R223 and U205 pin 6. Solder one of the resistors between the square pad of R220 and U205 pin 8. Be careful not to short either lead to any uninsulated point on the bottom of the board.

* R104 in parts and installation

>From ERRATA Sheet (dated 12/18/94)

In the parts list on page 3 and the build instructions on page 8, R104 is described as a 50 ohm resistor (green-black-black-gold). It should have been described as a 51 ohm resistor (green-brown-black-gold).

* Page 20 (volume control)

Page You may need to snap off or bend the antirotational tab of the front panel pot when installing it so that it fits flat against the front panel.

January 14th, 1995 Update Section

* Spacers used between boards

It has come to the attention of the project that not all the spacers are the same length. There is a difference of about 1mm in the two type of spacers. If the builder has these slightly shorter spacers, then when the two boards are stacked there will be a slight space between the top of the spacer and the bottom of the top board when the interboard connectors are placed fully into position. It is NOT suggested that the builder secure down the screws so as to place stress on the top board. The best solution will be on a case by case basis. If you notice a gap of between .5mm and 1mm between the top of the spacer and the bottom of the top board, then simply place a small

washer in the gap. This is the simplest way to correct the problem. The other way is to just tighten the screws so that they are secure, but not placing stress on the top board. (Thanks to Vince KD7AI for catching this)

* PC and Mac serial hookup

Answers to questions regarding a problem about getting a computer to talk out the serial line to the dsp-93.

-- Are you sure you have all the necessary wires in your serial cable. If I remember correctly, you may be using a Mac. The cable requires RTS,CTS and not all serial cables carry this. (Ron, W5RKN)

-- check out the handshaking used by your terminal program. You should set it for NO handshaking whatsoever...this burns me from time to time when I switch terminal programs or operating systems. (Mark, KC4EBR)

January 11th, 1995 Update Section

* MAX692CPA Part

The first production run of DSP-93 were shipped with a MX692CPA, instead of the required MAX692ACPA. The 'A', turns out to be significant. The solution for using this chip (692CPA) on the DSP-93 is simple:

Ground pin 8 (VBAT). Then, the unit will work fine with either of the two MAXIM chips (692CPA or 692ACPA). You will find a hole next to pin 8 of U116. This pad is connected to pin 8 on the circuit side (bottom) of the PC Board. Solder a short jumper wire from this pad to pin 3 of U116 (GROUND). Now you can use either device (692CPA or 692ACPA). This fix has been tested with both types of devices and it works fine. NO CUTS ARE REQUIRED ON THE BOARD.

* The following has been added to the build doc.

Be sure to read the following paragraphs carefully.

You must configure your DSP-93 properly or you may cause your radio to go into a transmit mode after power up or reset. If your radio is placed in transmit, it may burn out a preamplifier or damage your radio. If you read and understand the following in the RADIO IO ports must be configured to a determined radio port control state at power up by strapping certain lines on the DB25 "Interface Port" interfacing the TNC. The monitor code checks the logical state of four lines after a power up or reset. The logical state of these lines will establish the initial output condition of the lines which control your radio's push to talk line and the external frequency shifter. It is suggested that you configure these lines with jumpers to +5 or ground according to the requirements of your radio. Refer to your radio's manual for information about how these signals will affect the radio's operation. In other words, do you ground your radio's PTT input to key your radio or do you take it to plus five volts? After you have it wired, test it with your equipment to be sure things are working as you expect. Remember, with computers and so many things to connect properly it is easy to get something wrong and cause a problem so double check everything.

The jumpers to configure the four radio control ports can be placed on a 20 pin header. This header will then plug into the extra connector placed on the ribbon cable connecting the DB25 "Interface Port" and the 20 pin header on board two.

Refer to section "IO Port Configuration Setup" of your assembly manual, near the back (page 33 of First Printing), for more information.

January 10th, 1995 Update Section

* Good News! A source for 1.5amp transformers has been located and transformers should no longer be a problem. They will be shipped to everyone notifying the office that they require a replacement supply. Supplies are expected into the office on January 17th.

* Typo. page 15 col 1 para 6. Should be R217 not R127 and perhaps at end of line add U205 pin 14. (Ian, ZL1A0X)

* Page 15 col2 ... suggest that C214 be included in group below or maybe highlight it some way. I was caught out and placed a 0.1 instead of 1.0UF cap in position C214. (Ian, ZL1A0X)

* Page 20 col 2 re speaker wire. There is not a square PCB pad as mentioned in 2nd from bottom paragraph. (Ian, ZL1A0X)

NOTE: The square pad was suppose to be the hole next to the edge of the board.

* Page 21 RESET button. Should mention that it is soldered onto board 1. There is also a reset position in the same area on Board 2. (Ian, ZL1A0X)

* When installing the interboard connectors JP201, JP202, JP203, and JP205 you need to be careful. Extra care is needed when handling the boards after they have been installed. (Jeff, ZL1BIV)

P.S. Congrats to Jeff, ZL1BIV and Ian, ZL1A0X for the first units finished and working.

January 2nd, 1995 Update Section

* Wall Transformer

If you got a 1 amp supply, you must contact the office in order to get the correct 1.5 supply. See messages on dsp-93 for all the details. E-mail gjones@tenet.edu, call (817) 383-0000, or fax (817) 566-2544. After informing the office, please ship the supply in small box back, so we can exchange it.

PLEASE DO NOT CUT THE POWER PLUG OFF THE END.

If you did, put a note in with the unit so that we don't ship it back that way :-)

* Schematics Changes: On page 3 of 3 Digital:Power Supply

C118 & C119 are drawn twice: C119 once as a by-pass caps 0.1 and again as a 4.7 uF filter cap. and C118 in the power supply filter and in the by-pass cap drawing.

Change C119 from a 4.7 uF to a 0.1. Remove the extra C119. Change the extra C118 to C123. (Bob de N5BRG)

* Schematics Changes: On page 3 of 3 Digital:Power Supply

C123 is not on the diagram. It's a by-pass for U116 and is 0.1 uF. Add this to your schematic. (Bob de N5BRG)

* Schematics Changes: On page 2 of 3 Digital reset and Clock:

C110 : The value is not given just the labeled CAP. The value of C110 is 0.1 uF. Correct your schematic. (Bob de N5BRG)

* Page 19

The LED flats are small and hard to see. It might be a good double check and to mention the SHORT lead (cathode) goes in the square hole. The bend is about where the marking crimp's are on the leads. (Bob Winingham KC5EJK)

LED leads are not always cut this way. We should mention this in case they are. Be sure to look at the flat of the package to double check. (Bob de N5BRG).

* Page 10/col 2

It has been suggested:

P100 has GIANT holes for the connections to it. Much larger than the terminals that go into it. It makes it difficult to find something to solder to. I twisted the terminal closest to the edge of the board a little so that a piece of leftover wire would go through it and one of the other terminals. I then stuck another wire through it to the other terminal. There are three, if that sounds confusing. These wires bridged the hole in the pc board, supported the jack as I soldered it and gave me additional soldering area. I then trimmed the excess wire. If you do that be sure not to leave the terminals jumpered. It looks like two of them are, but I suspect you can expect smoke if you jumper all three together. (Jim de K4GV0)

I have soldered a number of these connectors to boards by just placing the connector flat on the PC board and filling the three holes with solder. I used a 25W soldering iron. This method works. (Bob de N5BRG)

* R224 in parts and C207 on schematics

R224 was dropped in the production board, but was not removed from the parts list. This means you have an extra resistor for this part. It was removed from page 14 of the install. It is also shown on the schematics on page 1 of 5 along with a capacitor marked as C207. Both of these should be marked out in the schematic. They do not exist on the PC boards. The identifier C207 was used on the capacitor placed near U202 and it is connected to pins

1 and 2 of U202. This should be added to the schematic on page 3 of 5.
C207 is a 22 pF capacitor. (Bob de N5BRG)

* Page 17 (JP208 2 pin Male Header)
JP208 was left off the parts list and parts placement diagram. It is in the install section. This is a two pin jumper located next to R215 on board 2. If you are short a jumper and you did not install J100 then cut a pin off this part and use it for J208. (Bob de N5BRG)

* You have a Mac and need to read the IBM disks.
I have a Macintosh and I had no problem using Apple File Exchange to read the two computer disks into my computer. In addition, PC Exchange version 2.0.2 on system 7.5 works fine. (Bob KC5EJK)

I used DOSMouter to read the files onto my Mac. (Greg, WD5IVD)

* Flux removal
There has been a long discussion on the best ways to handle flux removal. Refer to the dsp-93 mail list archives for the information.

December 30th, 1994 Update Section

* Be sure to check the bottom of the bags for parts that might be stuck. The enclosure hardware was in it's own little plastic bag.

* Inter-board connectors
When installing, make sure that the 83B parts (the longer ones) are used on board 2. Refer to the supplied sheet on the errata, which shows the connectors in 1:1 size for comparison. The shorter ones on Board 1 (bottom) will be cut off, while the longer ones are used to connect it to board 2. The difference in lengths between 63B and 83B is about a 1/4 inch. These are almost impossible to remove when installed, so DOUBLE CHECK!
(** For International builders the component ref sheet is in the build doc **)

* Page 3/2nd col (Jim de K4GV0)
R105 should be (red-red-brown-gold). It is correct on install page.
R211 should be (red-black-orange-gold). It is correct on install page.

* Page 7, Socket Install
It has been suggested:
That header J100 be installed before the U114 and U115 sockets are installed, due to the tight fit. (Jim de K4GV0)
TAPR NOTE: This will be corrected in the next run of the board.

* Page 9 (C113 and C114)
It has been suggested:
If you are putting zig-zags in the leads of the 0.1 caps to make them fit the hole spacing watch out for C113 and C114 as there are small land-holes between and the solder might wick over if the cap leads are touching the board at that spot. (Bob KC5EJK)
TAPR NOTE: The via location will be corrected in the next run of the board.

* Page 15/col 1
It has been suggested:
The power jumper that need to be added to the +5 of Pin 14 and Pin 1 of the resistor strip it would have been better if I had put the jumper in and then soldered the pins. I could have placed a small wire into the pad holes or wrapped around the pins. (Bob KC5EJK)
TAPR NOTE: This will be corrected in the next run of the board.

* Page 15/16
My kits C207 and C212 the 22pF cap had markings of 22J not the (27) as shown on page 15 and 16. (Bob KC5EJK)

* Page 17 JP207 and JP212
These are both shown as JP207 on the silkscreen. The parts placement is correct. The correct JP207 is near U212. The other silkscreen JP207 near I0202 is JP212
TAPR NOTE: This will be corrected in the next board production.

* Page 18 P203AC Jack
The directions say to solder in at position P100, it should be position P203. Typo.

* Page 18/col 2 Crystal
It has been suggested:
Somehow reading the Crystal instructions misses telling people with a

From: Bob_Winingham@acd.org (Bob Winingham)
Date: 27 Jan 1995 01:44:29 GMT
To: dsp-93@tapr.org
Message-ID: <1245150.110610436@acd.org>
Rendered body type: text/plain

It is somewhat difficult to illustrate a round connector in a mail message but here's a sincere attempt. Use a mono-spaced font to view.

You are looking at the cable end-view of the 8-Pin Mini-DIN Plug.

```
      locating
      key
      ^
    6 7 8
    @ @ @
      3 4 5
    @ @ @
      1 2
    @ @
```

Note that the 3 and 4 pins are close together and there is a larger gap between 4 and 5.

The GIF Drawing DSP-93 Assembly manual Page 33 of 33 of the Male cable plug is slightly wrong and is NOT a mirror image of the Female Socket.

Here is the Wire Color code of the cable supplied with the DSP kit for the Radio Interface: Add to your DOC file.

Pin	Signal	Color
1	Freq-Down	Black
2	PTT	Brown
3	AUX IN	Red
4	ICOM	Orange
5	TD AUDIO (XMIT)	Yellow
6	GND	Green
7	Freq-Up	Blue
8	RD AUDIO (REC)	Violet
Case	Ground	Silver shield

Drawing revisions --- typo's:

AIO: Power Supply {5 of 5}
The +5 VDC Analog label says +5 VDC AHALOG
I did need a 10X microscope to see it was a H
and not an N :-)

Bob KC5EJK

208. Re: [DSP-93:233] VIDEO DISPLAY

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)
Date: Fri, 27 Jan 95 08:10:02 CST
To: dsp-93@tapr.org
Message-ID: <9501271410.AA09482@eagle.aud.alcatel.com>
Rendered body type: text/plain

>
> how can i drive my hercules mono display from the dsp93 scope and
> spectrum analyzer software?? i have borlands herc.bgi and hercules
> GraphX code but dont know how to incorporate with dsp-93.
> need any advice on the best tnc to use with dsp-93 for satellite
> and HF/VHF/UHF packet.
> reply wtbt@partyline.org bill N0LIK
>

Bill, the D93WE program is written in Windows. The Borland HERC.BGI driver is a DOS driver. You must have a Windows driver in order to run the D93WE program. I do not know of any Windows drivers for the Hercules card (others may?). The scope program requires at least 640x480 (ie: VGA) screen size.

209. Re: [DSP-93:236] uhh, hullo??

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)
Date: Fri, 27 Jan 95 08:15:13 CST
To: dsp-93@tapr.org
Message-ID: <9501271415.AA09485@eagle.aud.alcatel.com>
Rendered body type: text/plain

> I am going to try this one last time, I cannot understand for the life of me
> why my message has gone unanswered. Not even a "beats me" response. As it
> stands I have a \$450 pile of useless hardware sitting in front of me, hence
> my tone...
>

OK, let me give it a try....

> Monitor test, Speed Test, Memory Test and Testleds all work very
> successfully. As soon as I get to the test routines for the DAC, thats
> where it fails.
>
> >At what points are you looking for an output signal?
> >
>
> Checked pin 22 and 21 (Output + and -) and there was no life (some low level
> noise maybe) then tracing back, no serial data on DX, traced that back to
> pin 10 of interboard connector JP202, still no life. Traced that back to
> pin 54 of the TMS320C25 and still no life. Cannot directly probe the chip
> while operating as there is no extender for this kind of a board setup. So,
> up to the socket pin there is no life on DX while operating. So, ok, maybe
> a bad socket? Nope, continuity test confirms a good contact between the
> TMS320C25 and pin 10 of JP102.
>
> >Are you saying there is NO signal on DX?
> >
>
> Nope, none, nada. Stays in a low condition. Thought for the heck of it,
> pulled it high and it goes high, pulled it low, and well, no change (10K ohm
> to Vcc and Vss). This tells me its staying in a Hi-Z state.
>

I am not knowledgable in the various test programs, Ron and others
will have to help here.

I can only suggest the following things:

- 1) Are all the power supply voltages present on the AIO chip? Do you have
+5 volts digital, +5 volts analog, and -5 volts on the chip?
- 2) are the ground pin(s) on the chip verified to make contact with the
ground plane on the board (ohmmeter)?
- 3) The possibillity exists that your AIO chip is defective.

>
> A Very Dissatisfied DSP-93 Customer
>
> --
> *****
> ** Ronald C. Barnes - KA1KJZ Broadcast Engineer, WTXS-TV **
> ** ARRL CT Section Technical Specialist **
> ** internet: kalkjz@tiger.jvnc.net Member, Society of Broadcast Engineers **
> ** packet : kalkjz@n4gaa.ct.usa.na Member, IEEE **
> ** **
> ** Ask me about my TAPR DSP-93, it makes a good story **
> *****
>
>

- Tom, N5EG

210. Re: [DSP-93:248] Schematic Questions

From: rparsons@bga.com (Ronald G. Parsons)
Date: Fri, 27 Jan 1995 09:03:27 -0600
To: dsp-93@tapr.org
Message-ID: <ab4eb542000210048f97@[204.96.0.37]>
Rendered body type: text/plain

Bill NØLIK

>(p2 of 3) Where does the <RESET RS> arrow originate?

I believe <RESET RS> arrow is the originating point. It is the RS signal.
I've asked that this be relabeled <RS>

>(p1 of 5) What is the reference to DSP93 B2.A12 in the AIO Input
>and output arrows? Are those arrows supposed to join the Analog
>Output and Analog Input arrows on p3 of 5?? Are arrow point directions
>correct?? What is DSP93 B2.A11??

Again I've asked that these arrows be relabeled.
AIO Input (p1) connects to Analog Input (p3)
AIO Output (p1) connects to Analog Output (p3)
I'm not sure what the arrow directions mean.

>If r224 and C207 are shorted then +5v is shorted to ground??

An error

>What are the limits and waveforms on Analog Input/Output and where
>are the external connectors??

Analog Input is (as documented p3) +- 3V Max
What external connectors are you referring to?

>Bill NØLIK reply wtb@partyline.org

Ron W5RKN

also:
w5rkn@amsat.org

211. Re: [DSP-93:249] KISS mode modems??

From: rparsons@bga.com (Ronald G. Parsons)
Date: Fri, 27 Jan 1995 09:03:32 -0600
To: dsp-93@tapr.org
Message-ID: <ab4eb78b010210041900@[204.96.0.37]>
Rendered body type: text/plain

Bent,

The data output from the DSP-93 modems is on the DSP-93 TNC connector and is TTL level. If you wish to use this signal for your own processing, you would have to convert to RS232 levels.

I'm not sure what you mean by "modems for 1200 baud AFSK KISS mode", etc.

>Hi everybody,

>

>I have followed the discussion on how to connect the DSP-93 to different
>brands of commercial TNCs.

>

>However, I would expect that a TNC is not needed when you use programs
>such as NOS.

>

>In this case it should be possible to run the DSP-93 directly as a
>KISS mode modem having the KISS frames going to my computer via the
>serial port.

>

>Could somebody please confirm that this is indeed the case, and also
>please tell me the name of the modems for 1200 baud AFSK KISS mode,
>1200 baud PSK KISS mode, and for 9600 baud FM KISS mode.

>

>Best 73 de Bent/OZ6BL

>-----
>Bent Bagger bb@craycom.dk
>...!mcsun!dkuug!sony!bb
>Systems Engineer Voice: +45 44530100
>Cray Communications A/S - Denmark Fax: +45 44531415

Ron W5RKN

also:
w5rkn@amsat.org

212. Re: [DSP-93:250] Radio Cable

From: rparsons@bga.com (Ronald G. Parsons)
Date: Fri, 27 Jan 1995 09:03:40 -0600
To: dsp-93@tapr.org
Message-ID: <ab4eb9d403021004a26a@[204.96.0.37]>
Rendered body type: text/plain

Bob KC5EJK

I agree with the comments on the drawings on page 33. I'll make sure or artist (it wag Greg I believe) whips himself 8 times with a wet noddle.

The problem with documentating the color code is that there is no guarantee that all MiniDIN-8 cables will use ths scheme. I have cut quite a few and thay are NOT all the same. Safer to determine this in a cable by cable basis.

Thanks, I had not noticed the +5 VDC AHALOG

Ron

>It is somewhat difficult to illustrate a round connector in a mail message
>but here's a sincere attempt. Use a mono-spaced font to view.

>
>You are looking at the cable end-view of the 8-Pin Mini-DIN Plug.

>
> locating
> key
> ^
> 6 7 8
> @ @ @
>
> 3 4 5
> @ @ @
>
> 1 2
> @ @
>

>Note that the 3 and 4 pins are close together and there
>is a larger gap between 4 and 5.

>
>The GIF Drawing DSP-93 Assembly manual Page 33 of 33 of the
>Male cable plug is slightly wrong and is NOT a mirror image of
>the Female Socket.

>
>Here is the Wire Color code of the cable supplied with the DSP kit
>for the Radio Interface: Add to your DOC file.

>
>Pin Signal Color
>---- -----
> 1 Freq-Down Black
> 2 PTT Brown
> 3 AUX IN Red
> 4 ICOM Orange
> 5 TD AUDIO (XMIT) Yellow
> 6 GND Green
> 7 Freq-Up Blue
> 8 RD AUDIO (REC) Violet
>Case Ground Silver shield

>
>
>-----
>Drawing revisions --- typo's:

>
>AI0: Power Supply {5 of 5}
>The +5 VDC Analog label says +5 VDC AHALOG
>I did need a 10X microscope to see it was a H
>and not an N :-)

>-----
>
>
>Bob KC5EJK

Ron W5RKN

also:
w5rkn@amsat.org

213. Re: [DSP-93:252] Re: uhh, hullo??

From: Bob Stricklin <bstrick@tenet.edu>
Date: Fri, 27 Jan 1995 18:19:08 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501280019.SAA18721@Gayle-Gaston.tenet.edu>
Rendered body type: text/plain

Ron I posted a note to you a few days ago requesting that you check the reset pin on the AIO. Make sure it is low after a reset or power up. It should go high after you load a program which uses the AIO. The DX pin will not be active until the reset is high and a program is loaded.

Chceking this reset state is key and will tell me if the U210 pal is working properly.

Also I have your address as:

18 Goodyear Ave.
Naugatuck, CT 06770

Is this correct?

I also called information trying to get your number so I could call you about your problem and they have not listing for you. Would you please post your number in a message to me. If you do not find the problem soon I may call you to talk it over.

Bob Stricklin, N5BRG

214. Re: [DSP-93:249] KISS mode modems??

From: jwt@shrine.cyber.ad.jp (Jim Tittsler)
Date: Sat, 28 Jan 1995 09:59:35 +0900
To: dsp-93@tapr.org
Message-ID: <tRPA1Khq18n1077yn@shrine.cyber.ad.jp>
Rendered body type: text/plain

In article <451DC4D632C@rd.craycom.dk>, you wrote:
> However, I would expect that a TNC is not needed when you use programs
> such as NOS.

Nobody has released software/firmware that includes the HDLC functions that would be necessary to make a TNC-less KISS unit possible. There may not be enough processor time to do it for the 9600 baud modems, and there hasn't been enough programming time to finish it for the 1200 baud modems. :-)

Jim 7J1AJH/AI8A

215. Re: [DSP-93:248] Schematic Questions

From: Bob Stricklin <bstrick@tenet.edu>
Date: Fri, 27 Jan 1995 20:25:16 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501280225.UAA24639@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain

According to wtb@partyline.org:

>
>
> (p2 of 3) Where does the <RESET RS> arrow originate?

The <RESET RS> is the reset signal that goes to the RS line of the TMS320 chip. I need to add this to the page 1 of 3 DSP Section page.

> (p1 of 5) What is the reference to DSP93 B2.A12 in the AIO Input
> and output arrows? Are those arrows supposed to join the Analog
> Output and Analog Input arrows on p3 of 5?? Are arrow point directions
> correct?? What is DSP93 B2.A11??

Yes, these do connect as you indicate and the direction does need to be changed. This is a correction which has already been made in the updated schematics.

> If r224 and C207 are shorted then +5v is shorted to ground??

These parts should be removed from the schematic. They are not on your board. This is referenced in the update notes.

> What are the limits and waveforms on Analog Input/Output and where
> are the external connectors??

Refer to the TI data sheet for the TLC320C44 for more details.
What external connectors ?

Bob Stricklin, N5BRG

216. Found it!!

From: kalkjz@tiger.jvnc.net (Ron Barnes)
Date: Sat, 28 Jan 1995 09:23:42 -0500
To: dsp-93@tapr.org
Message-ID: <199501281426.AA23811@tiger.jvnc.net>
Rendered body type: text/plain

Well, on the subject of no life on DX, I found the trouble. Seems there was an iffy connection on the socket of PAL U210. I had to read the TI databook on the TMS320, the section on the serial port to figure this out. When I saw that the TX Clock goes thru there, I started looking at that area. I replaced the el-cheapo socket with a real machine pin socket, and all is well. Gonna replace the other sockets with machine pin ones someday, as my experience has been these type of sockets do not age gracefully.

Now... on the subject of the last build update...

```
>===== WARNING =====  
>===== WARNING =====  
>  
>We have discovered an error in the port initialization code.  
>  
>This is the procedure that initializes PTT and FREQ UP/DOWN at reset  
>and power-on times.  
>  
>It turns out that PTT Port 1 ALWAYS initializes high.
```

Funny, mine initializes low all the time. Would be nice if it would init. high as my TM-741 needs an active low PTT.

And on the omitted pullup resistor on pin 3 of the TNC connector, well that 'splains why I couldnt find the +5 volts to pull up the configuration lines.

I got it working yesterday.... I had it analog-ly looping back to itself with the PKTP1 program, then later got it to receive some actual off-air packets. Now if I could only get the darned PTT working.

Oh.... did the wall warts ship?? I havent gotten mine yet.

217. Re: [DSP-93:259] Found it!!

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sat, 28 Jan 1995 09:25:53 -0600
To: dsp-93@tapr.org
Message-ID: <ab50118d0002100460dc@[204.96.0.79]>
Rendered body type: text/plain

(Ron Barnes)

Glad you found (at least one of) your problem(s).

```
>>This is the procedure that initializes PTT and FREQ UP/DOWN at reset  
>>and power-on times.  
>>  
>>It turns out that PTT Port 1 ALWAYS initializes high.  
>  
>Funny, mine initializes low all the time. Would be nice if it would init.  
>high as my TM-741 needs an active low PTT.  
>
```

How do you have pins 7, 14, 16, 18 of the DSP-93 TNC connector (or the corresponding ones on the DB25 Interface port) strapped? DO NOT leave them floating.

If you ground these pins, the radio ports PTT and UP/DN lines will initialize high.

Ron W5RKN

also:
w5rkn@amsat.org

218. [DSP-93:253] RE: SCHEMATIC QUESTIONS

From: wtb@partyline.org
Date: Sat, 28 Jan 95 11:34:06
To: dsp-93@tapr.org
Message-ID: <9501281134.0G92A00@partyline.org>
Rendered body type: text/plain

if i try to use dsp93 for something other than radio control dont i need a way to put an analog signal in and get it out? thats the external connector i'm looking for. maybe i should just use the receive and transmitt lines on the radio ports?
i'm trying to use the critter without windows since i have a dislike for windows and the equivalent apple points and click. if i can load the scope (etc) with dos i had hoped to operate with dos. seems that it would be a lot more efficcient. ?????
bill NØLIK

219. [DSP-93:258] RE: SCHEMATIC QUESTIONS

From: wtb@partyline.org
Date: Sat, 28 Jan 95 11:44:34
To: dsp-93@tapr.org
Message-ID: <9501281144.0GHVW00@partyline.org>
Rendered body type: text/plain

Bob, what does the schematic look like when r224 and c207 are eliminated?
Can you give me a verbal routing from pin to pin of the efff
effected IC's ??? thanks Bill NØLIK

220. Re: [DSP-93:261] RE: SCHEMATIC QUESTIONS

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sat, 28 Jan 1995 13:49:31 -0600
To: dsp-93@tapr.org
Message-ID: <ab504dc6000210048704@[204.96.0.98]>
Rendered body type: text/plain

Bill,

>if i try to use dsp93 for something other than radio control dont i
>need a way to put an analog signal in and get it out? thats the
>external connector i'm looking for. maybe i should just use the
>receive and transmitt lines on the radio ports?

There are several inputs available:
RD Audio on each radio port
Aux In on each radio port
AUX INPUT 1 on JP203
AUX INPUT 2 on JP203

There are several outputs available:
TD Audio on each radio port
Pin 10 on JP203

>i'm trying to use the critter without windows since i have a dislike for
>windows and the equivalent apple points and click. if i can load the
>scope (etc) with dos i had hoped to operate with dos. seems that it
>would be a lot more efficcient. ?????

Don't know what inefficiency you are worried about. Perhaps Bob can publish the I/O specs to the scope program.

What application do you have in mind?

>bill NØLIK

Ron W5RKN

also:
w5rkn@amsat.org

221. Re: [DSP-93:262] RE: SCHEMATIC QUESTIONS

From: Bob Stricklin <bstrick@tenet.edu>
Date: Sat, 28 Jan 1995 14:49:33 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501282049.0AA12276@Gayle-Gaston.tenet.edu>
Rendered body type: text/plain

I will be posting some updated postscript files of the updated schematics soon. If you can not work with postscript then you will have to wait for a

paper version via TAPR.

Just remove or mark out the R224 and C207 and you have it. The A10 is reset via U210 as shown.

Bob Stricklin, N5BRG

222. Re: [DSP-93:263] RE: SCHEMATIC QUESTIONS

From: Bob Stricklin <bstrick@tenet.edu>
Date: Sat, 28 Jan 1995 14:59:03 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501282059.0AA12860@Gayle-Gaston.tenet.edu>
Rendered body type: text/plain

According to Ronald G. Parsons:

>
> Bill,
>
--- deleted stuff here---

> >i'm trying to use the critter without windows since i have a dislike for
> >windows and the equivalent apple points and click. if i can load the
> >scope (etc) with dos i had hoped to operate with dos. seems that it
> >would be a lot more efficcient. ?????
>
> Don't know what inefficiency you are worried about. Perhaps Bob can publish
> the I/O specs to the scope program.

I agree with Ron here. I do not have a I/O spec to publish. Tom N5EG developed the scope program and defined the I/O for the DSP-93. It would be possible to develop a pure DOS version but it would take a lot of time and not be as nice as the windows version.

I was slow going to windows also but realized it was the main stream. With all the development tools available doing something like a scope display is much eaiser.

If you really want to do it in DOS and know how to develop the code then I figure you will be able to determine the I/O Tom established for the DSP-93.

I would suggest you look for some new applications which have not been done to date in Windows or DOS.

Have Fun!

Bob Stricklin, N5BRG

>
> What application do you have in mind?
>
> >bill N0LIK
>
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>

223. Re: Transformer Problems

From: Bob Stricklin <bstrick@tenet.edu>
Date: Sun, 29 Jan 1995 08:57:59 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501291458.IAA22092@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain

> From kellner Sun Jan 22 18:00:19 1995
> To: gjones@tenet.edu
> Subject: DSP-93 transformer
>
> Hi Greg,
>
> I received the replacement transformer for the DSP-93 kit. It was
> in a box that said Jameco, 9VAC 1500ma. The transformer itself is
> also labeled for 9VAC 1500ma. However, when I tested board #1 with
> no ICs for a +5 DC test, there was no +5V. Looking a little further,

> there was not 9V AC from the transformer. Putting it on a scope, it
> turns out that that transformer puts out 24V DC! It must have an output
> cap in it also, because it holds 24VDC when power is removed, until the
> cap drains down.
>

Rich Kellner, based on your analysis you must have a defective transformer.
To be sure Greg had the TAPR office send me a JAMACO transformer. The
voltages checked out fine on this one.

I will send you the one I have checked out tomorrow by US
mail. Please mail me the one you have. I would like to verify the problem
and then make sure JAMACO knows about it.

Bob Stricklin, N5BRG

224. Need Help or Parts?

From: Bob Stricklin <bstrick@tenet.edu>
Date: Sun, 29 Jan 1995 09:00:26 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501291500.JAA22251@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain

To All DSP-93 kit Builders

I was under the impression that all transformers and parts have shipped.
If anyone else has a problem with a transformer please post a note here. If
anyone else has not got their DSP-93 working and you are still expecting
parts or help in resolving a problem and you have not seen any feedback for
some time also post a note about it.

Bob Stricklin, N5BRG

225. DSP-93 UART problems

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sun, 29 Jan 1995 11:01:39 -0600
To: dsp-93@tapr.org
Message-ID: <ab5179d903021004d3e1@[204.96.0.34]>
Rendered body type: text/plain

This is my response to Graeme on U0-22.

To : VK5ZWA
From: W5RKN
Time: 164059UTC
Date: 29 Jan 1995

Hello Graeme,

>I'm sure the xtal is not oscillating and that means the UART is probably a
>dud.
>

>Ron, if you have the equipment available could I ask you to check a couple
>of things on your DSP so I can compare it with what I see here?
>

>1. Could you scope the xtal pins? I would like to know what amplitude the
>signals are on each of the xtal pins. Here I see about 50mv of pure cludge
>which I'm sure is just residual noise from the DSP board. I see nothing
>that suggests a signal of 4.91mhz.

I see a signal of about .2 microsec period with amplitude about .5 Vp-p.
Looks like you have a problem (as if you didn't know that). The UARTs are
apparently VERY static sensitive. Anyone nearby that you can trade out with?

>2. If you have access to a digital freq. meter I would like to know the freq.
>of the signal on pin 9 or 15 of the UART. Here I see a signal of around
>14.khz and it's rather unstable. It's certainly not a multiple or sub
>multiple of the normal clock speeds.

I see nothing here on my scope - flat line.

>BTW in checking out the board around the UART I found an error in the
>circuit diagram you may wish to pass onto the TAPR group.
>
>On page 4 of 5 pin 23 of U212 is shown as going to JP203 pin 17, it actually
>goes to JP203 pin 5.

I think you mean pin 25 and, assuming this, you are correct.

I'll pass it on.

>One other thing, watching LED1 when pressing the reset button, the LED blinks
>twice rapidly before staying on. Is this normal?

Yes, I thought that was documented somewhere. An indicator that you really
reset it and all (well some) of the unit is working.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

Austin, Texas USA
Internet : w5rkn@amsat.org
SAT : K0-23, K0-25

Ron W5RKN

also:
w5rkn@amsat.org

226. [DSP-93:267] Need Help or Parts? (fwd)

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 29 Jan 1995 13:22:24 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199501291922.NAA14375@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

HI Bob..I checked with Dorothy at the office and...

All the additional parts have been shipped to everyone...several weeks ago.
One person reported that they had not received the additional parts so we
shipped them again.

Transformers have been shipped to those that have indicated that they needed
a replacement transformer. All requested transformers have been shipped.

There is no outstanding activity on this issue that we know of at the
office.

Greg

According to Bob Stricklin:
>From dsp-93@tapr.org Sun Jan 29 09:19:09 1995

To All DSP-93 kit Builders

I was under the impression that all transformers and parts have shipped.
If anyone else has a problem with a transformer please post a note here. If
anyone else has not got their DSP-93 working and you are still expecting
parts or help in resolving a problem and you have not seen any feedback for
some time also post a note about it.

Bob Stricklin, N5BRG

227. On the air testing

From: Antonio Fernandez <100341.640@compuserve.com>
Date: 29 Jan 95 15:58:25 EST
To: DSP-93 mail list <dsp-93@tapr.org>
Message-ID: <950129205824_100341.640_BHA72-2@CompuServe.COM>
Rendered body type: text/plain

Hi Ron,

tnx for your response to my U0-22 message. I still have not been able
to get a loaned scope to make the final setting of the modem, so the
setting is been done on the air during different passes of U0-22, K0-23
and K0-25. I used the percentage efficacy display in WISP's MSPE to
do it, I know this is far from scientific, but it's real life :-). After a few
passes of different sats my view now is that downlink performance
on K0-23 and K0-25 is comparable to the analog modems, I think I
should do some statistics when I gather data from more passes and
compare it to the previous data (i.e pre-DSP93) I have. My feeling is
that there will be no significant differences. Regarding U0-22 I still
think (that's pure speculation, :-)) that there are no differences with

a strong signal but it is more sensitive to signal strength (see below), may be this is due to the modulation characteristics of UO-22. Regarding your question on deviation, I do not have a way to measure it. I used the 9600 bps port on the local BBS to set transmit deviation, I started transmitting connect requests and moving the pot till I've got responses from the bbs. Well... I'm a physician and the only electronic test equipment I have are a digital VOM, RF power and SWR meter, and a frequency counter. All I needed to make the DSP-93 operational was the VOM and your support.

Best 73 de Toni, ea4le

```
>Toni,
>
>Got your message (below) from UO-22.
>
>I suggest you set the RX gain so you have about 1 Vp-p on TP1. TP1 is the
>primary audio input signal to the AIO chip.
>
>Do you have a way to measure your transmit deviation?
>
>
>
>From: EA4LE
>To: W5RKN
>Subject: it works!!!
>Keywords:
>-----
>To : W5RKN
>From: EA4LE
>Time: 210812UTC
>Date: 25 Jan 1995
>-----
>Hello Ron,
>
>Thank you for your congrats msg on the Internet.
>After sometime off the sats, while assembling the DSP-93, now I'm
>back to test the beast. In a few days I will have access to a scope
>so I will be able to set the RX gain properly, in the mean time
>will do some trial & error testing :-). My first impression is that
>the DSP-93 Uplinks very well to UO-22 -haven't tried other sats yet-.
>On the RX side, not knowing yet the signal level at the ADC input, it
>seems that performance is comparable to non-dsp fsk modems with
>strong signals, but it degrades faster as the signal strength
>decreases. Will see what happens when the level is OK.
>I will do some testing uplinking this msg, should you wish to answer
>to it please do it on the internet as the mess I still have in the
>shack does not allow me to work in auto-mode.
>
>Best 73 from Toni, EA4LE.
>From Las Rozas, Madrid, Spain. IN80bm
>
>U/L: TR751A 7+7e1 RHCP -- D/L: TS850S+CONV 19+19 e1 RHCP -- TrakBox
>DSP-93 by TAPR/AMSAT Comp: 486DX 33MHz - Soft: WiSP - AMSAT-UK 5112
>
>satellite: ea4le@ko23 ax25: ea4le@ea4pe.eam.es.eu
>internet: ea4le@amsat.org cis: 100341,640
>
>Ron W5RKN
>
>also:
>w5rkn@amsat.org
```

228. [DSP-93:263] RE: SCHEMATIC QUESTIONS

```
From: wtb@partyline.org
Date: Sun, 29 Jan 95 15:07:33
To: dsp-93@tapr.org
Message-ID: <9501291507.0L8Z100@partyline.org>
Rendered body type: text/plain
```

Ron, I don't have specific applications in mind at this time. I'm just trying to line up the ducks so I can start shooting when the time comes. Sort of feel like a Piper Cub pilot who just bought a brand new F-15..

229. Re: [DSP-93:269] Need Help or Parts? (fwd)

```
From: kalkjz@tigger.jvnc.net (Ron Barnes)
Date: Sun, 29 Jan 1995 23:46:55 -0500
```

To: dsp-93@tapr.org
Message-ID: <199501300450.AA15649@tiger.jvnc.net>
Rendered body type: text/plain

>HI Bob..I checked with Dorothy at the office and...
>
>All the additional parts have been shipped to everyone...several weeks ago.
>One person reported that they had not received the additional parts so we
>shipped them again.
>
>Transformers have been shipped to those that have indicated that they needed
>a replacement transformer. All requested transformers have been shipped.
>
>There is no outstanding activity on this issue that we know of at the
>office.
>
>Greg

I havent gotten my transformer yet. When did it ship? I indicated to Greg
via E-mail to him directly around the 11th that I needed one.

230. Re: [DSP-93:272] Re: Need Help or Parts? (fwd)

From: Greg Jones <gjones@tenet.edu>
Date: Sun, 29 Jan 1995 23:33:49 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501300533.XAA13933@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

According to Ron Barnes:
> I havent gotten my transformer yet. When did it ship? I indicated to Greg
> via E-mail to him directly around the 11th that I needed one.

Yes, it has been shipped. Dorothy will call UPS tomorrow and have them
place a track on it to see what happened to it.

Greg

231. Re: [DSP-93:257] Re: KISS mode modems??

From: "Jarkko Vuori" <MIMIC@jeeves.hut.fi>
Date: Mon, 30 Jan 1995 10:05:08 EET-2DST
To: dsp-93@tapr.org
Message-ID: <132F3F39ED@jeeves.hut.fi>
Rendered body type: text/plain

> Nobody has released software/firmware that includes the HDLC functions
> that would be necessary to make a TNC-less KISS unit possible. There
> may not be enough processor time to do it for the 9600 baud modems,
> and there hasn't been enough programming time to finish it for the 1200
> baud modems. :-)

Well, I think that is should be possible to do that. We have
in our simple DSP CARD 4 a Motorola 27 MHz DSP56001 and
I have implemented those HDLC-functions with that DSP-chip.
It takes about 30% of the computing resources, and we have
9600 bit/s G3RUH compatible full-duplex satellite modem
working with no problems. For those interested, source and
documentation is available with anonymous ftp from jeeves.hut.fi,
directory /alefnull.

You are right that programming those HDLC-functions with
DSP-chips is not very fun :)

Jarkko Vuori, OH2LNS

232. Re: [DSP-93:272] Re: Need Help or Parts? (fwd)

From: Bob Stricklin <bstrick@tenet.edu>
Date: Mon, 30 Jan 1995 19:15:55 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199501310115.TAA27095@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain

According to Ron Barnes:
B
> I havent gotten my transformer yet. When did it ship? I indicated to Greg
> via E-mail to him directly around the 11th that I needed one.
>

I shipped the transformer this morning by 1st class mail from Dallas.

233. KISS mode modems defined

From: "Bent Bagger" <bb@craycom.dk>
Date: Tue, 31 Jan 1995 16:58:05 GMT+1
To: dsp-93@tapr.org
Message-ID: <4B998FC47B9@rd.craycom.dk>
Rendered body type: text/plain
To Ron W5RKN

Thanks for your reply.

You write:

>
> I'm not sure what you mean by "modems for 1200 baud AFSK KISS mode", etc.
>

so here is my definition of a KISS mode modem:

A KISS mode modem is an instance of DSP-93 which receives and transmits analog signals on one or both of the radio ports and KISS formatted frames on the serial interface to the computer.

The analog signals are modulated as required by the intended usage, i.e. 1200 baud AFSK for terrestrial usage, 9600 baud FM for UoSAT and KITSAT usage, and 1200 baud PSK for PacSat usage.

The analog signals and the KISS data are of course related: the analog output is a properly modulated and formatted instance of a KISS frame received over the serial interface. The KISS frames sent to the computer are decoded instances of the received analog data on the radio port.

Finally the modem accepts and acts on the standard KISS control frames (TxDelay, Slottime, etc)

Best 73 de Bent/OZ6BL

234. Re: KISS mode modems

From: "Bent Bagger" <bb@craycom.dk>
Date: Tue, 31 Jan 1995 17:01:07 GMT+1
To: dsp-93@tapr.org
Message-ID: <4B9A5A44353@rd.craycom.dk>
Rendered body type: text/plain
To Jim 7J1AJH/AI8A

Dear Jim,

you wrote:

>...
> and there hasn't been enough programming time to finish it for the 1200
> baud modems. :-)
>
> can I take this to mean that work is under way on such a modem?

Best 73 de Bent/OZ6BL

235. TNC Interface

From: Geoff Chapman <moose@triode.apana.org.au>
Date: Tue, 31 Jan 1995 17:11:35 +0100
To: tapr1 <dsp-93@tapr.org>
Message-ID: <Pine.3.89.9501311756.A22202-0100000@triode>
Rendered body type: text/plain

My TNC is a PacComm TINY-2. The disconnect header pinouts as shown on p32 of the manual are generally in agreement with the J5 TINY-2 header, except that Pins 19 & 20 and Pins 3 & 4 are internally connected on the latter.

Can I leave this, or must I cut these two tracks on the TINY-2 board?

236. Re: [DSP-93:278] TNC Interface

From: rparsons@bga.com (Ronald G. Parsons)
 Date: Tue, 31 Jan 1995 15:27:05 -0600
 To: dsp-93@tapr.org
 Message-ID: <ab545adc000210040759@[204.96.0.43]>
 Rendered body type: text/plain

Geoff,

The same situation was on my MFJ 1270B. Leave 3&4 and cut the trace on the board between 19&20. If you go back to the internal modem on the TINY-2, you will need to jumper 19&20 back again.

Ron

>
 >
 > My TNC is a PacComm TINY-2. The disconnect header pinouts as shown on
 >
 >p32 of the manual are generally in agreement with the J5 TINY-2 header, except
 >
 >that Pins 19 & 20 and Pins 3 & 4 are internally connected on the latter.
 >
 >
 >
 > Can I leave this, or must I cut these two tracks on the TINY-2 board?
 >
 >
 >
 >
 >

73 geoff vk2ait

Ron W5RKN

also:
 w5rkn@amsat.org

237. Re: [DSP-93:269] Need Help or...

From: DTownsend@aol.com
 Date: Tue, 31 Jan 1995 21:44:05 -0500
 To: dsp-93@tapr.org
 Message-ID: <950131214145_9544346@aol.com>
 Rendered body type: text/plain

Hello Greg,

I was trying to be patient, but, I have not received my transformer yet either. I had faxed in my need some ago. I have already cut the lead and put the right connector on.

But the way. My DSP93 is now working thanks to this SIG. Thanks for all the help. I have not yet connected it to the radio though.

Will let the SIG know how connecting to the 736 works.

Talk to you later. de Don>> KE7NR Phoenix,AZ.

238. 736R

From: creek!hammond@camel.campbell.edu (Mark L. Hammond)
 Date: Wed, 1 Feb 1995 03:51:44 +0000 (GMT)
 To: camel!tapr.org!dsp-93
 Message-ID: <m0rZW6b-000030C@creek.uucp>
 Rendered body type: text/plain

Don,

Good deal on the working DSP-93. PLEASE let us know how the 736R hookup goes...believe it or not, all the beta-group was either Kenwood or Icom.... we are anxious to hear how you fair!

> Hello Greg,
 >
 > I was trying to be patient, but, I have not received my transformer yet
 > either. I had faxed in my need some ago. I have already cut the lead and put

> the right connector on.
>
> But the way. My DSP93 is now working thanks to this SIG. Thanks for all the
> help. I have not yet connected it to the radio though.
>
> Will let the SIG know how connecting to the 736 works.
>
> Talk to you later. de Don>> KE7NR Phoenix,AZ.
>

--
Mark L. Hammond [KC4EBR] -- Proud TAPR/AMSAT DSP-93 Beta Tester --

February 1995

Original source file: dsp.9502

Source: http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9502

1. Re: [DSP-93:267] Need Help or Parts?

From: Carol Byers <crlbyers@garlic.com>
Date: Tue, 31 Jan 1995 21:53:10 -0800 (PST)
To: dsp-93@tapr.org
Message-ID: <Pine.A32.3.91.950131215219.31124A-100000@garlic.com>
Rendered body type: text/plain

Hi Bob,

Have not received the replacement transformer yet ...

On Sun, 29 Jan 1995, Bob Stricklin wrote:

>
> To All DSP-93 kit Builders
>
> I was under the impression that all transformers and parts have shipped.
> If anyone else has a problem with a transformer please post a note here. If
> anyone else has not got their DSP-93 working and you are still expecting
> parts or help in resolving a problem and you have not seen any feedback for
> some time also post a note about it.
>
> Bob Stricklin, N5BRG
>
>
>
>
>

2. Re: [DSP-93:269] Need Help or Parts? (fwd)

From: Carol Byers <crlbyers@garlic.com>
Date: Tue, 31 Jan 1995 21:56:59 -0800 (PST)
To: dsp-93@tapr.org
Message-ID: <Pine.A32.3.91.950131215508.31124B-100000@garlic.com>
Rendered body type: text/plain

Hi Greg,
Have sent your several msg to your email address, and always get it
returned ! Don't know what's happening still need the replacement
transformer...

Please.

On Sun, 29 Jan 1995, Greg Jones wrote:

> HI Bob..I checked with Dorothy at the office and...
>
> All the additional parts have been shipped to everyone...several weeks ago.
> One person reported that they had not received the additional parts so we
> shipped them again.
>
> Transformers have been shipped to those that have indicated that they needed
> a replacement transformer. All requested transformers have been shipped.
>
> There is no outstanding activity on this issue that we know of at the
> office.
>
> Greg
>
>
> According to Bob Stricklin:
> >From dsp-93@tapr.org Sun Jan 29 09:19:09 1995
>
>
> To All DSP-93 kit Builders
>
> I was under the impression that all transformers and parts have shipped.
> If anyone else has a problem with a transformer please post a note here. If
> anyone else has not got their DSP-93 working and you are still expecting
> parts or help in resolving a problem and you have not seen any feedback for
> some time also post a note about it.
>
> Bob Stricklin, N5BRG

>
>
>
>
>
>
>

3. Transformers

From: Greg Jones <gjones@tenet.edu>
Date: Wed, 1 Feb 1995 01:34:01 -0600 (CST)
To: dsp-93@tapr.org (DSP-93 Build)
Message-ID: <199502010734.BAA01402@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

My apologies -- the following folks are on the list to have transformers shipped when the next batch arrives this week. These are the last on the list that have requested that they need a 1.5 amp transform. Everyone else has been shipped a unit...just keep watching for the UPS truck/van to arrive shortly.

The following people should have theirs shipped this week.

Earl Chiswell, W0IAK
Michael McCann, KB5FMG
Roy Davis, WB9RKN
Jon Sorensen, WA6UCA

Carol yours has been shipped. :-)

Back to school - Greg

4. Questions from UO-22

From: rparsons@bga.com (Ronald G. Parsons)
Date: Wed, 1 Feb 1995 10:48:27 -0600
To: dsp-93@tapr.org
Message-ID: <ab55677a00021004bfff@[204.96.0.175]>
Rendered body type: text/plain

The following is my reply to VE3EGO on UO-22.

To : VE3EGO
From: W5RKN
Time: 162325UTC
Date: 01 Feb 1995

Hello Syd,

>1. U215 LED Driver (AIO Pgs 3&4 of 5). Pin 8 is connected to GND. On
> my board Pin 9 is not connected to any supply voltage. Should this pin
> connected to the +5V Analogue supply or to the +5V general supply
> source. My guess would be to the general supply source.

That's strange. On my board, pin 9 is a +5 (and I assume it would be the digital (general) 5V.

> BTW I have applied plenty of heat to the pin to determine if it was
>a bad solder joint. I quit when I saw solder on the component side of
>the board. If it is supposed to be connected to the +5V layer on the
>board it is not connected on my copy.
>

>2. U211 Pin 8. (AIO P4 of 5). Pin 8 is connected to -12V. What is the
> source of the -12V.

It's labeled V- on (AIO 5 of 5).

>3. U216 74LS245. U216 is shown on two pages of the schematic diagram
> namely pages AIO 3 of 5 and AIO 4 of 5. There is however only one
> U216 on the PCB. I am puzzled Hi. Surely one is not redundant.

Redundancy for clarity??? I'll report it. Thanks.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

Austin, Texas USA
Internet : w5rkn@amsat.org
SAT : KO-23, KO-25

Ron W5RKN

also:
w5rkn@amsat.org

5. Re: [DSP-93:285] Questions from UO-22

From: Bob Stricklin <bstrick@tenet.edu>
Date: Wed, 1 Feb 1995 12:58:16 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199502011858.MAA04103@Joyce-Perkins.tenet.edu>
Rendered body type: text/plain

According to Ronald G. Parsons:

>
> The following is my reply to VE3EGO on UO-22.
>
> To : VE3EGO
> From: W5RKN
> Time: 162325UTC
> Date: 01 Feb 1995
> -----
> Hello Syd,
>
> >1. U215 LED Driver (AIO Pgs 3&4 of 5). Pin 8 is connected to GND. On
> > my board Pin 9 is not connected to any supply voltage. Should this pin
> > connected to the +5V Analogue supply or to the +5V general supply
> > source. My guess would be to the general supply source.
>
> That's strange. On my board, pin 9 is a +5 (and I assume it would be the
> digital (general) 5V.
>

U215 is an array of darlington transistors. The inputs (pins 1 - 7) are connected to an internal 2.7K ohm resistor in series with the base of each transistor. There is not power required or connected to the chip. You may find the inputs at +5 if the LED is supposed to be on. The outputs will be at about +5 if the LED is off and about 1 volt (V_{sat} of transistor) if the respective LED is on. Pin 8 of U215 is and must be connected to ground.

> >
> >2. U211 Pin 8. (AIO P4 of 5). Pin 8 is connected to -12V. What is the
> > source of the -12V.
>

This voltage needs to be -3 Volts or less to make the RS232 spec. It is fed from unregulated input to VR201 which runs -9V to -12V.

>
> >3. U216 74LS245. U216 is shown on two pages of the schematic diagram
> > namely pages AIO 3 of 5 and AIO 4 of 5. There is however only one
> > U216 on the PCB. I am puzzled Hi. Surely one is not redundant.
>
> Redundancy for clarity??? I'll report it. Thanks.
>
> 73 from Ron - W5RKN

Ron is correct, this was redundant for clarity. Maybe it was not so clear after all.

Bob Stricklin, N5BRG

>
> Using the TAPR/AMSAT DSP-93 unit - ask me about it!
>
> -----
> Austin, Texas USA
> Internet : w5rkn@amsat.org
> SAT : KO-23, KO-25
> -----
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>

6. Re: [DSP-93:284] Transformers

From: burgedm@ott.hookup.net
Date: Wed, 01 Feb 95 18:34:38 -0500
To: dsp-93@tapr.org
Message-ID: <9502020235.AA0020@burgedm.ott.hookup.net>
Rendered body type: text/plain

I don't see my name on that list. I haven't received ANY of the missing parts yet. Do you have any idea when I can expect them.

Dave Burgess - VE3NNW

```
//-----  
// Burgedm @ hookup.net  
// OR  
// Burgedm @ tc.gc.ca
```

7. Re: [DSP-93:284] Transformers

From: Carol Byers <crlbyers@garlic.com>
Date: Wed, 1 Feb 1995 20:15:07 -0800 (PST)
To: dsp-93@tapr.org
Message-ID: <Pine.A32.3.91.950201201250.16488A-100000@garlic.com>
Rendered body type: text/plain

Thanks for the response...can't wait to get the project finished.

Carol, W9HGI

8. updates

From: ljs@rain.org (L.J.Shepherd)
Date: Wed, 01 Feb 1995 21:22:39 -0800
To: DSP-93@tapr.org
Message-ID: <199502020519.VAA13776@coyote.rain.org>
Rendered body type: text/plain

Haven't received any new updates in over 10 days now.....is the newsgroup server functioning properly ? Just thought you'd like the feedback.....this isn't a complaint, just curious to know if there is a comm problem or just temporary group inactivity. Thanks !

Jim K60YY in Santa Barbara

9. U112 questions

From: morrison@RT66.com (Bill Morrison)
Date: Thu, 2 Feb 1995 05:45:19 -0700 (MST)
To: dsp-93@tapr.org
Message-ID: <9502021245.AA02083@RT66.com>
Rendered body type: text/plain

My dsp93 is happy quite yet. Here are the syptoms and the actions I have taken.

Put it all together and no prompt after initial power on.

Facts:

- 5 Volts looks ok.
- with tapr eeprom in place, one of the leds seems to flash a little on reset.
- I look at U216 to check pin 1 (direction) and pin 19 (enable) to see if data is being written to the uart. Here I see pin 1 looks happy, just like the r/w pin on the processor. Pin 19 however does not look so happy. I really see no pulses on this guy at all. Here is what I did next.

What I tried:

Thinking that the number of times that the uart is written to during the reset code may be not real high and therefore I would not be able to see it on my scope, I wrote a little program.

This program initializes the processor a little and then just loops on an OUT instruction to I/O port 3. The code is attached at the end. I replaced the 27C256's with my own (they are 150ns ones) and ran this code.

Results:

Once again the enable pin (19) on the 245 (U216) does not seem to be doing anything. I then check the inputs to the 22v10 (U112)
clk (pin1) good clock
pins 2,3,4,5 look like address lines
r/w good
i/o is good, all the inputs look good

Outputs look bad, nothing.

Typically my next step would be to check the 22v10. So, here is the request for the jedec file for the thing so that I can test it. Any other suggestions would be well received here.

Thanks a bunch and 73.

Bill Morrison n0kma

Here is the source for my test code

```
AR0      .EQU    00h
AR1      .EQU    01h
AR2      .EQU    02h
AR3      .EQU    03h
AR4      .EQU    04h
AR5      .EQU    05h
AR6      .EQU    06h
AR7      .EQU    07h

; Assigned memory mapped registers
DRR      .EQU    00h      ; data receive register address.
DXR      .EQU    01h      ; data xmit register address.
TIM      .EQU    02h      ; Timer count register address.
PRD      .EQU    03h      ; Timer period register address.
IMR      .EQU    04h      ; Interrupt mask register address (5-0).
GREG     .EQU    05h      ; Global address control (7-0).
; Block B0 0200h to 02FF in Data Page 4-5 (512- 767 decimal)
; Block B1 0300h to 03FF in Data Page 6-7 (768-1023 decimal)
; External 1000h to 7FFFh or 0FFFFh in Data Page 8 to 511
;
; Block B2 for 60h to 7Fh in Data Page 0 (96-127 decimal)
; Reserved on chip RAM as flags and storages.
; (block B2 108 through 127.)
;
PIO      .EQU    07h      ; Latch Buffer
PIO_BUF  .EQU    60h      ; Value to Port 07h (Radio Select/Gain)
TNC_BUF  .EQU    61h      ; Value to Port 06h (TNC Output Latch)
PDC_BUF  .EQU    62h      ; Value to Port 0Bh (Radio Digital Control)
BUFO     .EQU    65h      ; SIO output buffer
BUFI     .EQU    66h      ; SIO input buffer
DO       .EQU    67h      ; data output buffer
UART0    .EQU    68h      ; UART output hold buffer
UARTI    .EQU    69h      ; UART input hold buffer
UARTW    .EQU    6Ah      ; UART word to send

; CMDA .EQU 0A14h      ; load TA=5 for 15 us conversion
; CMDA .EQU 0E1Ch      ; load TA=7 for 28 us conversion
; CMDA .EQU 1020h      ; load TA=8 for 31 us conversion
; power-up default is 65 us conversion at 40 MHz CPU clock, TA=RA

CMDA     .EQU    0C18h      ; AIO load TA=6 for 24 us conversion
CMDDB    .EQU    1E3Eh      ; AIO load TB=15 decimal
CMDC     .EQU    0263h      ; AIO load configuration Sync, no HPF
; Port 07h bit D15 for AIO *Enable, D14 for AIO *Reset

; TNC IO Locations      Input/Output Relative to DSP-93 CPU
SIO_RTS  .EQU    2        ; Input
SIO      .EQU    3        ; Output
CD       .EQU    5        ; Input Carrier Detect
CONN_ST  .EQU    4        ; Input Connection status
CTS      .EQU    1        ; Output Clear To Send
X_CLK    .EQU    2        ; Output Xmit clock
R_CLK    .EQU    8        ; Input receive clock
TXD      .EQU    8        ; Output Xmit data
RXD      .EQU    10h      ; Input receive data
ROC_CLK  .EQU    20h      ; Recovered Clock from EPROMs in TNC

; TASM does not assume the necessary 1000h starting address
.ORG     0000h
reset    b init

        .org 1000h
init
        ROVM
        LDPK    0
```

LARP 7
LACK 03Fh
SACL 4
LACK 55h
LARK AR7,60h
RPTK 31h
SACL *+

TOP

OUT 60h,3
B TOP

.END

10. Re: [DSP-93:289] updates

From: rparsons@bga.com (Ronald G. Parsons)
Date: Thu, 2 Feb 1995 08:19:37 -0600
To: dsp-93@tapr.org
Message-ID: <ab56934b000210043117@[204.96.0.45]>
Rendered body type: text/plain

>Haven't received any new updates in over 10 days now.....is the newsgroup
>server functioning properly ? Just thought you'd like the feedback.....this
>isn't a complaint, just curious to know if there is a comm problem or just
>temporary group inactivity. Thanks !
>
Jim K6OYY in Santa Barbara

Last update was 1/27. Haven't had anything newsworthy since then.

Ron W5RKN

also:
w5rkn@amsat.org

11. Re: [DSP-93:290] U112 questions

From: Bob Stricklin <bstrick@tenet.edu>
Date: Thu, 2 Feb 1995 08:45:22 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199502021445.IAA27965@Gayle-Gaston.tenet.edu>
Rendered body type: text/plain

Bill Morrison please post your email address and your mail address if you do
not mind. It does sound like you have a bad U112.

Bob Stricklin, N5BRG

12. Re: [DSP-93:290] U112 questions

From: rparsons@bga.com (Ronald G. Parsons)
Date: Thu, 2 Feb 1995 09:06:00 -0600
To: dsp-93@tapr.org
Message-ID: <ab56a4a102021004441a@[198.3.117.34]>
Rendered body type: text/plain

>My dsp93 is happy quite yet. Here are the syptoms and the actions
>I have taken.
>
>Put it all together and no prompt after initial power on.

Have you made sure that you have the RTS signal asserted on the serial
input. You will not get a prompt without it.

Ron W5RKN

also:
w5rkn@amsat.org

13. Re: [DSP-93:292] Re: U112 questions

From: morrison@RT66.com (Bill Morrison)
Date: Thu, 2 Feb 1995 10:58:47 -0700 (MST)
To: dsp-93@tapr.org
Message-ID: <9502021758.AA18894@RT66.com>
Rendered body type: text/plain

>
>
> Bill Morrison please post your email address and your mail address if you do

> not mind. It does sound like you have a bad U112.
>
> Bob Stricklin, N5BRG
>
>
>

Sorry, email is morrison@rt66.com. Thanks
Bill Morrison

14. Findings and questions

From: deh6@po.CWRU.Edu (Donald E. Haselwood)
Date: Thu, 2 Feb 1995 20:11:36 -0500
To: dsp-93@tapr.org
Message-ID: <199502030111.UAA02894@owl.INS.CWRU.Edu>
Rendered body type: text/plain

1. I sent in my old 1 amp transformer. Postage was \$3.00. I was wondering if we would have been ahead just to send TAPR the money and end up with a spare xfrmer.

2. Using TASM, I found (after quite of fussing around) that .WORD ends up with the high/low order bytes reversed what I expected. Since I am new to the instruction set I was sure I was doing something wrong with the instruction code. Putting a .MSFIRST at the front of the program causes TASM to put the most significant byte first. It makes life much simpler.

3. The schematic shows pin 24 of the TLC32047 with a "flag" labelled AUXIN. I couldn't find anything on the schematic where this goes and I didn't want to pull apart the unit(which is working fine) to try to trace it. Does this go anywhere?

4. I suggest adding a few words to Monitor Operation documentation for the Sin Table (p 12). It took me a while to realize that the 540 deg table is not in RAM after going to high speed--unless the additional memory is added. I had assumed that an address of Fxxx would load in the high end of whatever memory was installed. Adding a statement along the lines of, "In high speed mode additional memory is required for the monitor supplied table. As an alternative, the table sinco512.dat provides source code for generating a table."

I find it takes about 10-15 seconds to load an assembled version of the sin table (depends on whether I load from DOS or via Windows D93WE).

Another minor item on p 12: "...extends above program memory 0F00h the monitor..." Should be 0F000h, I believe. These little glitches make learning tough.

5. If somebody who could say "a few words" about how the AIO works with the processor it would help. I'm digging into TESTBUZZ--my first reaction was that it shouldn't work. Since it works it must be continuously sending what is in the DXR reg, but just what is going on?

Don, K4JPJ

15. Transfor Received

From: DTownsend@aol.com
Date: Thu, 2 Feb 1995 21:20:48 -0500
To: dsp-93@tapr.org
Message-ID: <950202211931_11377343@aol.com>
Rendered body type: text/plain

Hello All and Greg,

Got my new transformer today. Thanks!! Will send old one back tomorrow.

Expect to have 736 hooked up this week-end. CUL de Don>KE7NR

16. DSP-93 Software

From: frank@tcet.unt.edu (Frank Perkins)
Date: Thu, 2 Feb 95 20:33:07 CST
To: dsp-93@tapr.org
Message-ID: <9502030233.AA116284@tcet.unt.edu>
Rendered body type: text/plain

February 2, 1995 @ 20:25 CST

Hi Gang,

I don't plan to add any link or network stuff (KISS, etc.) to the modems I have been working on. I am personally interested in the signal processing side of communications, so I'll leave the HDLCs and protocols to the TNC/PC programmers. I can think of plenty of signal processing projects for the DSP-93 so I am going to continue in this direction. BTW, I use an MFJ1278C TNC with my DSP-93. They run about \$120.

If you want to play with TOR on HF, you can use HFU_93X.*. With this modem, data is piped to and from your PC VIA THE DSP-93 UART rather than through the TNC. I have copied AMTOR using this modem. A standard 9-pin RS232C modem-to-PC cable should work. Be sure to set the TOR configuration file for use with the DSP-93. Johan discusses the setup in the TOR docs. I don't think RTTY will work the DSP-93 until Johan has time to add some additional code. (Greg, has Johan received his DSP-93 yet?)

73 Frank WB5IPM

17. Re: [DSP-93:297] Findings and questions

From: rparsons@bga.com (Ronald G. Parsons)
Date: Thu, 2 Feb 1995 22:08:55 -0600
To: dsp-93@tapr.org
Message-ID: <ab5759c202021004d142@[204.96.0.79]>
Rendered body type: text/plain

>3. The schematic shows pin 24 of the TLC32047 with a "flag"
>labelled AUXIN. I couldn't find anything on the schematic where
>this goes and I didn't want to pull apart the unit(which is
>working fine) to try to trace it. Does this go anywhere?

There is a pad labeled "AUX+" near R219. This is it. An auxillary input point for your use. You need to initialize the AIO to specify it.

>4. I suggest adding a few words to Monitor Operation
>documentation for the Sin Table (p 12). It took me a while to
>realize that the 540 deg table is not in RAM after going to high
>speed--unless the additional memory is added. I had assumed that
>an address of Fxxx would load in the high end of whatever memory
>was installed. Adding a statement along the lines of, "In high
>speed mode additional memory is required for the monitor supplied
>table. As an alternative, the table sinco512.dat provides source
>code for generating a table."

Good point. The memory map by chip is on page 26 of the build doc.

>Another minor item on p 12: "...extends above program memory
>0F00h the monitor..." Should be 0F000h, I believe. These little
>glitches make learning tough.

I can't find this. Help me.

>5. If somebody who could say "a few words" about how the AIO
>works with the processor it would help. I'm digging into
>TESTBUZZ--my first reaction was that it shouldn't work. Since it
>works it must be continuously sending what is in the DXR reg, but
>just what is going on?

Take a look through the source file TESTBUZZ.ASM, and if you have specific questions, let me know.

Ron W5RKN

also:
w5rkn@amsat.org

18. Loader

From: deh6@po.CWRU.Edu (Donald E. Haselwood)
Date: Fri, 3 Feb 1995 00:04:10 -0500
To: dsp-93@tapr.org
Message-ID: <199502030504.AAA00922@owl.INS.CWRU.Edu>
Rendered body type: text/plain

I seem to be having a problem loading program at addresses above 3FFFh. It looks like the loader stops after the last record

The following program illustrates. Before loading, fill memory:
G F P 1000 8000 AAAA R
then run loader and do a dump
G D P 3FE0 4020

[illegible][illegible]

I seriously doubt I will generate code that goes above 3FFF, but I was trying to get a sine table stored near the end of memory. First I had hoped to use the one stored in ROM, but at the moment I have not come up with a scheme to get that table into program memory [I suppose using memory B0 and CNFD is a possibility, but another tricky area to figure out]. The next solution is to use `sinco512.dat` and `.org` it in into the high-end. This is where I found I can't seem to load above 3FFFh.

One thing I've found--D93WE (Windows program) sure is convenient.

73's
Don, K4JPJ

19. KAM 9612

From: Roy Welch <rdw@crl.com>
Date: Fri, 3 Feb 1995 08:45:36 -0800 (PST)
To: amsat-bb@amsat.org
Cc: dsp-93@tapr.org
Message-ID: <Pine.SUN.3.91.950203084126.11102A-100000@crl12.crl.com>
Rendered body type: text/plain

Someone had a problem and asked about interfacing his KAM 9612 to WiSP and/or the DSP-93. I am told the proper setup in the 9612 is:

MAXUSERS 0/1
MYDROP 1/0

Thanks to NL7VJ and W0TUP.

20. Re: [DSP-93:301] Loader

From: rparsons@bga.com (Ronald G. Parsons)
 Date: Fri, 3 Feb 1995 10:50:34 -0600
 To: dsp-93@tapr.org
 Cc: mcdermot@eagle.aud.alcatel.com
 Message-ID: <ab5802aa02021004804e@[204.96.0.78]>
 Rendered body type: text/plain

Don,

I assembled your program and loaded it with the Mac loader and all went fine.

```
*g
*d [P]ROGRAM or [D]ATA
p
XXXX XXXX
3fe0 4020
3FE0  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
3FE8  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
3FF0  3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0
3FF8  3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0
4000  4000 4000 4000 4000 4000 4000 4000 4000
4008  4000 4000 4000 4000 4000 4000 4000 4000
4010  4010 4010 4010 4010 4010 4010 4010 4010
4018  4010 4010 4010 4010 4010 4010 4010 4010
4020  4020 4020 4020 4020 4020 4020 4020 4020
```

*

I assembled your program and loaded it with the D93WE loader and had the same problem you had. I'll send this to the D93WE developer.

```
*g
*d [P]ROGRAM or [D]ATA
p
XXXX XXXX
3fe0 4020
3FE0  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
3FE8  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
3FF0  3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0
3FF8  3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0
4000  4000 4000 4000 4000 4000 4000 4000 4000
4008  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
4010  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
4018  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
4020  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
```

Ron

```
>I seem to be having a problem loading program at addresses above
>3FFFh. It looks like the loader stops after the last record
>above 3FFFh is reached.
```

>

```
>The following program illustrates. Before loading, fill memory:
```

```
>G F P 1000 8000 AAAA R
```

```
>then run loader and do a dump
```

```
>G D P 3FE0 4020
```

>

```
>3FE0  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
>3FE8  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
>3FF0  3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0
>3FF8  3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0 3FF0
>4000  4000 4000 4000 4000 4000 4000 4000 4000
>4008  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
>4010  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
>4018  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
>4020  AAAA AAAA AAAA AAAA AAAA AAAA AAAA AAAA
```

>

```
>; Check loading at high addresses.
```

>;

```
>#INCLUDE "MONITOR.INC"
```

>;

```

> .ORG 1000h
> B RESET
> B RESET
> B RESET
> B RESET
> B RESET
>
>;
> .ORG 3FF0h
> .MSFIRST
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .WORD *,*,*,*,*,*,*,*,*,*,*,*,*,*,*,*
> .end ; end of program
>
>I seriously doubt I will generate code that goes above 3FFF, but
>I was trying to get a sine table stored near the end of memory.
>First I had hoped to use the one stored in ROM, but at the moment
>I have not come up with a scheme to get that table into program
>memory [I suppose using memory B0 and CNFD is a possibility, but
>another tricky area to figure out]. The next solution is to use
>sinco512.dat and .org it in into the high-end. This is where I
>found I can't seem to load above 3FFFh.
>
>One thing I've found--D93WE (Windows program) sure is convenient.
>
>73's
>Don, K4JPJ

```

Ron W5RKN

also:
w5rkn@amsat.org

21. Re: [DSP-93:303] Re: Loader

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)
Date: Fri, 3 Feb 95 11:48:32 CST
To: dsp-93@tapr.org
Message-ID: <9502031748.AA00768@eagle.aud.alcatel.com>
Rendered body type: text/plain

I have entered two bugs on the D93WE bug list:

1. Update to be able to invoke EPROM-resident .OBJ files.
2. Problem with program load at address > 3FFF.

- Tom, N5EG

22. Another D93WE bug

From: kalkjz@tigger.jvnc.net (Ron Barnes)
Date: Fri, 03 Feb 1995 23:29:02 -0500
To: dsp-93@tapr.org
Message-ID: <199502040433.AA01917@tigger.jvnc.net>
Rendered body type: text/plain

Minor bug, not even a bug, but a darn nuisance...

The convention in Windows programs is to make the exit hotkey X, not E. So those of us accustomed to doing ALT-F X to exit can do so as you can in just about every windows program.

Easy to fix at compile time for the next version, just make it E&xit rather than &Exit in whatever was used for a menu editor.

```

--
*****
** Ronald C. Barnes - KA1KJZ          Broadcast Engineer, WTXN-TV      **
**                               ARRL CT Section Technical Specialist  **
** internet: kalkjz@tiger.jvnc.net  Member, Society of Broadcast Engineers **
** packet : kalkjz@n4gaa.ct.usa.na  Member, IEEE                      **
**                               **                                     **
** Ask me about my TAPR DSP-93, it makes a good story                 **
*****

```

23. More on KAM 9612

From: Roy Welch <rdw@crl.com>
 Date: Sat, 4 Feb 1995 08:14:29 -0800 (PST)
 To: amsat-bb@amsat.org
 Cc: dsp-93@tapr.org
 Message-ID: <Pine.SUN.3.91.950204080920.20119A@crl6.crl.com>
 Rendered body type: text/plain

My previous message gave the following commands for setting up the KAM 9612 for 9600 bps satellite operation:

```

MAXUSERS 0/1
MYDROP 1/0

```

I have been informed that the MYDROP command is "not in the book" and is used to setup the 9612 for single port 9600 bps operation. Thanks to Nels, W0TUP, for this information.

73, Roy -- W0SL

24. Memory mapping and sine table

From: deh6@po.CWRU.Edu (Donald E. Haselwood)
 Date: Sat, 4 Feb 1995 12:06:28 -0500
 To: dsp-93@tapr.org
 Message-ID: <199502041706.MAA19470@owl.INS.CWRU.Edu>
 Rendered body type: text/plain

Ron,

Thanks for the response.

```

1. 0F00h
>>Another minor item on p 12: "...extends above program memory
>>0F00h the monitor..." Should be 0F000h, I believe. These
>>little glitches make learning tough.

>I can't find this. Help me.

```

Look about the second line up from the very end of the file MONITOR.INC.

2. Memory map--slow mode versus fast

I've been trying to sort out memory and the mapping. I think I FINALLY understand it.

Here are some concepts that took some digging to figure out. Let me know if they are not right.

Re: memory decoding on p 26 of the build doc--The SRAM maps 0000h - 7FFFh for U104, U105, and U108, U109, however, 0000h - 0400h only accesses memory internal to the TMS320. Furthermore, 0400h - 1000h (prog, fast mode) holds the monitor when in the fast mode (i.e. after "G" command). A memory fill to 0400h - 1000h blasts the monitor and hard reset is required to get things going.

U108,9,10,11 (data, fast mode) is not accessible when in the slow mode (i.e. after "R" or a hard reset). U104,5,6,7 accesses as data, and ROM as program, during the slow mode. Data stored in U108,9,10,11 during the fast mode is not affected (nor is accessible) while in the slow mode.

The TMS320C25 has three internal "scratch pads." B0 (100h words) can be configured for either program or data, the other two are data only. Hard reset as well as the monitor command, reset ("R"), configures B0 as data, 0200h - 02FFh [one can fill & dump with the monitor to check this]. This can be loaded with program (.ORG 0200h, etc.), however the first part of it gets used by the

monitor when there is a reset following the "G" command. It appears that 0276h is the lowest address not used by the monitor.

When the machine goes to fast mode (after "G" command), The monitor configures B0 as program. When configured as program, B0 occupies (prog, fast) FF00h thru FFFFh. These addresses behave as if the monitor is using them--after a fill no CR comes from the monitor following the fill command, and a dump shows something different in these addresses than what was in the fill word.

When additional memory is present (prog, fast, 8000h - FFFFh, i.e. U104,5,6,7) the processor does not address external SRAM for addresses FF00h thru FFFFh, accessing B0 (as program) instead.

B0 is switched between program and data usage via the CNFD & CNFP instructions, and is not directly affected by the XF line. The XF line/bit can be set/reset via SXF, RXF instructions. Setting XF bit switches the external memory, swapping U104,5,6,7 from program to data, making ROM available as program, and U108,9,10,11 not available; plus, the machine is slowed so that slow (and inexpensive) ROM can be used. A hard reset sets XF on, configuring the machine as slow mode, with ROM as program memory, and B0 as data.

If B0 is loaded with a program (after a reset where it is configured as data, of course), then the normal programming (located in the 1000h and up area) can jump to this (since the machine is in fast mode and B0 had been configured as program as part of the "G" command). Once executing out of B0, the XF bit can be turned off and on (RXF/SXF), thus swapping U104,5,6,7 between data and program, and ROM between not available and available as program.

Item: MONITOR.INC shows the memory map and the sine table at F000h - FFFFh, then later in the sine table section says it occupies F000h - F86Fh. The latter is correct, which also allows for B0 occupying FF00h thru FFFFh.

3. Program to load 540 deg sine table in high end of lower 32K chunk of (prog, fast) RAM.

Based on the above, I put together a small program that moves the 540 deg ROM sine table that is in ROM into SRAM, lower 32K (since I don't have 64K). It is faster than loading from an assembled table (which of course I had trouble loading above 3FFFh).

A small chunk of code is .org'ed to 02C0h which when executed will move the sine table. 02C0h puts the code above the stuff that appears to be associated with the monitor. The usual get-started code goes at 1000h, and branches to FFC0h, which is the location of B0 after the loader does the "G". The B0 code turns on the XF bit, slowing the processor and making ROM accessible. It then moves the sine table to (data, slow) SRAM; turns off the XF bit (changing the data RAM to program RAM; and branches down to the stuff at 100Dh so as to continue with the foolishness created (I put a branch to the monitor RESET). Hit "G" after the program runs, and the sine table appears at (prog, fast) 7000h .

The .OBJ follows. If someone wants the source I'd happy to put that out.

```
:18058000CE0D558AD2007000CBFFFC07751CBFFFC07851CBFFFC0A04
:180598007951CBFFFC07A51CBFFFC07B51CBFFFC07C51CBFFFC0A05
:1405B0007D51CBFFFC07E51CB6FFCA07F51CE0CFF80100D18
:18200000FF80100AFF80100AFF80100AFF80100AFF80100ACE01FF807D
:06201800FFC0FF8004146C
:00000001FF
```

Overall, keeping ones thinking straight with respect to a) program v data memory, b) external v internal memories, c) ROM and fast/slow mode, and d) program v data memory takes some learning. The last item is the easiest to forget, having been conditioned by years of working with single memory machines. More explanation in MONITOR.INC would be helpful. I'll write something up if you would like.

73's
Don, K4JPJ

25. Comment by VK5ZWA

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sat, 4 Feb 1995 12:18:15 -0600
To: dsp-93@tapr.org
Message-ID: <ab596efa020210047232@[204.96.0.76]>
Rendered body type: text/plain

Message via U0-22. If the build manual does not say that LED 1 blinks on reset, it should.

Ron

+++++
From: VK5ZWA
To: W5RKN
Subject: Resend
Keywords: -----

To : W5RKN
From: VK5ZWA
Time: 222603UTC
Date: 03 Feb 1995

Hello Ron,

Thanks for all the info. I guess my next move is to try and source a new UART locally. Don't like my chances though as the docs are very specific about the brand name.

>

>>One other thing, watching LED1 when pressing the reset button, the LED blinks >>twice rapidly before staying on. Is this normal?

>

>Yes, I thought that was documented somewhere. An indicator that you really >reset it and all (well some) of the unit is working.

>

The assembly manual says the led should come on ...no mention of the led blinking. I guess if the DSP93 comes up clean you probably wouldn't notice (or care less) but when things go wrong little details like that can become important.

Once again, thanks for all your help.

Regards, Graeme, VK5ZWA, Adelaide, South Australia @ K0-23 & K0-25.

Ron W5RKN

also:
w5rkn@amsat.org

26. Loaders

From: deh6@po.CWRU.Edu (Donald E. Haselwood)
Date: Sat, 4 Feb 1995 17:24:03 -0500
To: dsp-93@tapr.org
Message-ID: <199502042224.RAA27133@owl.INS.CWRU.Edu>
Rendered body type: text/plain

Ron, W5RKN

Re: loader problem. The loader problem also occurs with DSPLOAD.EXE. If the loader in DSP93-WE comes from the same code as DSPLOAD.EXE, then it is one-and-the-same problem. If not, DSPLOAD.EXE needs fixing, too.

73's
Don, K4JPJ

27. Audio monitor feature

From: Toni Fernandez <Toni.Fernandez@p111.radio.encomix.com>
Date: Sat, 04 Feb 95 09:55:25 +0000
To: "dsp-93@tapr.org" <dsp-93@tapr.org>
Message-ID: <2638595144@p111.f17.n341.z2.ftn>
Rendered body type: text/plain

Hi dsp-93 group,

In my dsp-93 the audio volume control has a behaviour that I do not know if it is a designed feature or not, anyway it's not documented and never 'heard' here any comment about that. Will try to explain, when a set the volume knob to the minimum position and a 'modem' is running I hear a noise in the loudspeaker that comes from the receiver audio, as I turn the volume knob clockwise the audio from the receiver ceases and then I listen to the hiss from the internal audio amplifier of the dsp-93. The same applies to the transmitted audio from the dsp-93, you can only monitor it once the volume knob is in a position that allows to listen to the internal audio amp.

Another question is about the recommended readings for a dummy to start doing some simple mods for the programs we currently have. I have never programmed in assembler or C, just BASIC (QuickBASIC), but would like to get my feet wet as Ron said. For example I would like to know how to modify or add (patch) simple things to the current features (i.e. filter bandwidth in the CW filter or adding the soft reset routine to the PSK modem). I think that programming the TSM in assembler is much far beyond my capabilities, but with the proper understanding of the thing, maybe I could do these simple tasks. What I mean is that at this stage I'm not looking for books like 'DSP algorithms' or 'filter design for DSP processors'.

Best 73 de Toni, ea4le

internet: ea4le@amsat.org
cis: 100341,640
ax25: ea4le@ea4pe.eam.espeu
satellite: ea4le@ko23

28. DSP-93 Memory usage

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sun, 5 Feb 1995 09:29:30 -0600
To: dsp-93@tapr.org
Message-ID: <ab5a9e6108021004612a@[204.96.0.101]>
Rendered body type: text/plain

To: DSP-93 users...

Don, K4JPJ, has produced the following description of memory usage in the DSP-93. This will be placed in the "doc" set in future distributions. Thanks to Don for writing this up.

Now, the rest of you, choose your topic and write it up.

Ron W5RKN

=====

Here are some "words" on the DSP-93 memory organization. I had to find the following out the hard-way. Maybe it will help others understand the details of the DSP-93. There seemed to be a gap between the TI literature and the TAPR material. The TI stuff gives everything about the TMS320, including a great deal that is inapplicable to the specific DSP-93 application. The DSP-93 stuff left a big gap in what was going on with how external memory is used, though there are clues here and there.

I didn't want to put such a tome out on to the dsp-93@tapr.org folk without a) someone looking it over for errors, and b) knowing if they might want it. I figured I run it past you first.

I banged this out on the keyboard while it was fresh, figuring that not only would help others (Charlie, W4OQM, told me "take good notes" for him), but it might serve as a reference a couple years down the road when I've forgotten the details and need a refresher.

Charlie, W4OQM, and I have come up with enough ideas for the DSP-93 to keep a small army of programmers busy for the next eon, however lacking minions to command we will probably be satisfied to accomplish just one. For this we need to understand the unit beyond how to hook it up to a TNC for receiving packet.

I've thought about (for years) *THE ULTIMATE* CW decoder, using DFT or spectral estimation techniques rather than narrow band filtering (I don't know if theoretically one has the advantage over the other). Charlie, has been tinkering with a scheme to

eliminate kerchunking on the local repeater (detect voice) as well as deal with DTMF and other tones. We may never get the ideas finished, but working towards it 90% of the fun.

73's
Don, K4JPJ

----- MEMORY MAPPING

The purpose of the following is to provide some detail as to how the DSP-93 implements memory in conjunction with the TMS320. Integral to this is scheme for providing a monitor in EPROM and high/low speed operation.

The Harvard architecture used in the TMW320 is quite different from the typical microprocessor. There are two memories utilized during one instruction--data and program. Until experience is gained working with this architecture it is easy to forget this basic principle. There are two memories active at the same time. By having two memories, a single instruction can load a word out of program memory and do something with a word out of data memory, all within the same cycle. It facilitates implementing filters and other digital signal processing algorithms. For example, stepping down a table of constants, such as filter coefficients and doing a multiply and add to accumulator with a data array of signal values can be accomplished at full machine cycle speed with no overhead for instruction fetches, nor double accessing of a single memory.

Program and data memory can change, and keeping track of "what is which" is needed. How this is done is largely a function of how the DSP-93 design used the TMS320. Therefore, the TMS literature will not give the whole story necessary to understand the DSP-93. Various clues are given in the DSP-93 docs and literature, but this tries to bring it together into one place. The following details show how memory is mapped under various conditions.

The DSP-93 has a number of physical memories. Some memory is internal to the TMS320C25 chip, and other is external. The tables below outline the physical memories, as well as the conditions which determine whether they are used by the as program or data. Following the tables is more discussion of how the configuration is organized and used.

Internal memory (TMS320C25):

Label	Can be configured as	Size
B0	Data or program *	0100h
B1	Data only	0100h
B2	Data only	0010h

* - B0 is in data mode after a hardware reset, monitor reset, or CNFD instruction. It is program after a monitor "G" command, or CNFP instruction.

External memory:

How the external memories are configured depends on the state of the XF bit. Hardware reset turns the XF bit ON, as will the SXF instruction. RXF turns it OFF. SRAM U104, U105, U110, and U111 come with the basic kit and provide two 32K memories (one program and one data). Four more SRAM IC's will raise the amount to 64K.

IC number	XF = ON(1) "Slow speed"		XF = OFF "Fast speed"	
SRAM	-----		-----	
U104, U105	Data	0000 - 7FFF(2)	Prog	0000 - 7FFF(2)
U106, U107	Data	8000 - FFFF	Prog	8000 - FFFF(3)
U108, U109	N.A.	 -	Data	0000 - 7FFF(2)
U110, U111	N.A.	 -	Data	8000 - FFFF
EPROM				
U102, U103	Prog	0000 - ????(2)	N.A.	 -

(1) - XF line/bit is ON after a hardware reset, after a monitor reset command ("R"), or after a SXF instruction. RXF turns the bit off, and it is also turned off after a monitor "G" command.

(2) - Addresses below 0400h access internal memory in the TMS320 and therefore are not available for use in the external memory.

(3) - Addresses FF00h - FFFFh access internal memory, B0, when B0 has been configured as program memory (normally after a monitor "G" command).

Note that all memory is organized as 16 bit words, and not bytes. Address 1000h addresses a 16 bit word, and address 1001h addresses the next 16 bit word. (In a byte oriented machines such as the PDP-11, which can address 16 bit words or 8 bit bytes, the address 1001h would address the second byte of a word, thus making 16 bit word addresses, 1000h, 1002, 1004h, etc.--such is NOT the case here). Along the same lines remember that the accumulator is 32 bits long so be careful about unintended sign extension.

Internal memory, B0, is configured to the data mode after a hard reset. Also, the monitor in EPROM configures B0 to data when a "R" (reset) command is executed, and to program when a "G" command is executed. Switching B0 modes is done with the instructions CNFP and CNFD, (set program, and set data, respectively), or the hardware reset that switches it to data.

External memory is switched via the XF line out of the TMS320. This line is controlled by the XF bit. A hardware reset sets this bit high. The bit can be set/reset by the instructions SXF/RXF, respectively.

When the XF bit is high, such as after power-up reset, EPROM which contains the monitor programs is active as program memory. This makes it possible to get the machine running with something intelligent. Since inexpensive EPROM is slow, the XF also selects a low speed mode (divides the 40 mhz clock by two, or four depending on jumper J100). In slow speed the processor is slow enough to accommodate the EPROM. XF also makes external memories U104,5,6,7 switch to data mode and U108,9,10,11 not accessible. This arrangement allows the EPROM monitor to load program into data memory (U104,5,6,7 and B0). This switching is necessary since the TMS320 does not execute instructions which store anything into program memory; the downloaded program is placed into the DSP-93 as data.

With the monitor program executing out of EPROM, the usual step is to download a program from the general purpose computer. The program being downloaded is stored as data, in data memory, which is U104,5,6,7 at this time. Upon completion of the downloading, the general purpose computer issues a "G" command which causes the DPS-93 monitor to turn off the XF bit. This switches U104,5,6,7 from data memory to program memory. The monitor also jumps to location 1008h (of program memory) to start the program that was just loaded (into what was data memory).

With XF low, program normally runs out of external SRAM, U104,5,6,7, using U108,9,10,11 for data storage. B0, B1, and B2 can also be used. B0 as stated before can be configured either as data or program, though remember that the monitor sets it to program after the loading process completes and a "G" command is given. Operating out of internal memory is somewhat faster than external memory and may be needed for time critical operations. The TMS320C2X User's Guide shows timings for instructions according to the memory combination being used.

Since B0 can be switched between data and program it can be loaded with a program which can be executed. During the normal program downloading process B0 is configured as data, so it can be loaded with program no differently than U104,5,6,7. The addresses where the program loads of course must be correct. If the program has code which was preceded by .ORG directive with the address so that the code assembles in locations 0200h - 02FFh, the loader will put that code into B0. Some code .ORG'ed to 1000h is also needed. When the loading process completes, the monitor does a "G" command and jumps to 1008h. The program at 1008h can then jump to B0 and execute the code which was loaded. When B0 is configured as program it is no longer at locations 0200h - 02FFh, but occupies FF00 - FFFFh. Therefore, the code assembled at 0200h - 02FFh must be capable of executing properly when moved to locations FF00h - FFFFh. The jump at from the

program in U104,5,6,7 will be to FFxyh, if the beginning of the code loaded into B0 is 02xyh.

External memory is not accessed for addresses below 0400h as these are reserved for the TMS320. Also, FF00h - FFFFh of program memory is not accessed when B0 is configured as program.

Note that some addresses are really registers within the TMS320, such as locations 0 and 1 which are used to load/receive the serial shift register data to/from the AIO chip. The TMS manual covers these in detail.

External memory, (prog, fast), 0400h - 1000h holds the monitor which is used when in the fast mode (since the monitor in the EPROM is only available in the slow mode). If these locations are blasted, such as with a monitor Fill command, the monitor is lost and a hard reset is required.

The TMS320 cannot load and store (i.e. move) data from program memory to program memory. Data-to-data memory can be accomplished, as well as program-to-data and data-to-program. Therefore is not likely that a runaway program will blast the monitor stored in 0400h - 1000h.

The monitor does not use B0 during the slow mode. Therefore it is possible to load the entire 256 words with program, or Fill it via the monitor. However, if a reset command is executed by the monitor, locations 0200h - 0275h are overwritten with "stuff" from the monitor, wrecking what might have been downloaded into B0. As long as a monitor reset does occur between the loading of B0 and utilization of B0 (either as data or program), then the full page can be used. Otherwise, only those locations not used by the monitor can be used (0276h - 02FFh).

[N5BRG] The monitor does use B0. It uses the "stuff" that is placed in B0 during the transition from low speed to high speed. So this will need a few changes.
Sine table--

A 540 deg, 0.25 deg step, sine table is located in EPROM. The monitor moves this table into locations (prog, fast) FF00h F86Fh. This is just below the B0 addresses of FF00h. However, if the additional 32K or memory has not been installed, the sine table will not be in SRAM. Furthermore, ROM is not accessible when executing program in U104,5,6,7.

One alternative is to assemble the table from the source code, SINC0512.DAT, with an appropriate .ORG and load it into program memory as part of a program. It can also be loaded separately, with a separate loading step to start the program that uses the table.

Another alternative is a program to move the monitor sine table into the lower 32K of (prog, fast) SRAM. This can be done by a small program that .ORGs into B0 (02C0h for example), plus a branch from the normal program start, 1008h, to the B0 code after loading (FFC0h). This small program then turns ON the XF bit which switches U104,5,6,7 to data and makes EPROM available as program memory. The sine table is then moved from the EPROM to data memory, and the XF bit turned back off. The program can then jump down to 100Dh and pick up where it left off, but now with the sine table moved into the high end of the lower 32K.

Note that the same process of loading B0 then branching to B0 after the loading and switch to high speed can be used to run code out of internal program memory, so as to achieve maximum speeds.

Don, K4JPJ

Ron W5RKN

also:
w5rkn@amsat.org

29. K4JPJ Memory Scoop

From: wtb@partyline.org
Date: Sun, 05 Feb 95 13:56:31
To: dsp-93@tapr.org
Message-ID: <9502051356.0JL3P00@partyline.org>
Rendered body type: text/plain

Congratulations to Don on deciphering a very important area. I haven't figured it out yet but wonder if you could include a paragraph up front that simplu lists the memories involved, the capacity, what is presently on the onchip ROM and the external EPROM (with sizes) and whether the memory is accessible for our use. (I dont think the onchip ROM would ever be.
Bill N0LIK wtb@partyline.org

30. data exchange

From: wtb@partyline.org
Date: Sun, 05 Feb 95 13:58:41
To: dsp-93@tapr.org
Message-ID: <9502051358.0JMX700@partyline.org>
Rendered body type: text/plain

TO: Bob N5BRG & Ron W5RKN
SUBJ: INFO TRANSFER

Hope to meet you at the TAPR convention is St Louis. That might be a good time to transfer any new hardcopy schematics or build data as well as software instructions. For those of us who only have email access, would it be possible to arrange an ftpmail source instead of the full fledged internet file transfer protocol.

Ron's query on proposed applications prompted some soul searching and leads to the following. As an aged neophyte of limited knowledge with severe limits on time and money my first application will be to do the best I can to use DSP93 to pull slow speed cw (5-15wpm) out of the total noise that goes with EME. All efforts to be on XT clone (herc mono). Hope to get lots of advice on how to approach that.

My second priority will be to use DSP93 for the TNC function on HF and VHF packet.

Other ideas include spectrurm analysis up to 10GHZ, extend my 20MHZ oscilloscope to 10GHZ, servo control of AZ-EL for the fastest satellite pass, and major extension of graphics capability of XT clone (herc mono) using free xenix software.

73 Bill N0LIK
wtb@partyline.org

31. Re: [DSP-93:312] K4JPJ Memory Scoop

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sun, 5 Feb 1995 16:25:40 -0600
To: dsp-93@tapr.org
Message-ID: <ab5b0040030210045f33@[204.96.0.163]>
Rendered body type: text/plain

> Congratulations to Don on deciphering a very important area. I haven't
>figured it out yet but wonder if you could include a paragraph up front
>that simplu lists the memories involved, the capacity, what is presently
>on the onchip ROM and the external EPROM
>(with sizes) and whether the memory is accessible for our use. (I dont
>think the onchip ROM would ever be.
> Bill N0LIK wtb@partyline.org

>From MONITOR.DOC (on the distribution diskettes)

Memory Map

The following memory map exist after you have entered a 'G' command from the monitor. The 'G' command is executed after a program download using DSPLOAD.EXE or the windows program D93WE. The unit is operating entirely in static ram and in the high speed at this point.

PROGRAM DATA

PROGRAM	DATA
0000 Interrupts and Reserved	0000 TMS320C25 MEMORY MAPPED REGISTERS
001F -----	0005 -----

		Reserved
	0060	-----
		On DSP Block B2
	007F	-----
Reserved		
For Monitor	01FF	-----
	0200	-----
		On DSP Block B0
	02FF	-----
	0300	-----
		On DSP Block B1
	03FF	-----
	0400	-----
		Page 8 Data Memory
0FFF	-----	
1000	TINT	
1002	RINT	
1004	XINT	
1006	TRAP	
1008	-----	
	User Program	User Data
	Memory Space	Memory Space
F000	-----	
	Sin Table	
FFFF	-----	FFFF -----

The memory space occupied by each RAM chip is on page 26 of the build document.

Ron W5RKN

also:
w5rkn@amsat.org

32. Memory config

From: deh6@po.CWRU.Edu (Donald E. Haselwood)
Date: Mon, 6 Feb 1995 23:11:45 -0500
To: dsp-93@tapr.org
Message-ID: <199502070411.XAA29973@owl.INS.CWRU.Edu>
Rendered body type: text/plain

Bill, NØLIK

Putting the memories and sizes in the first paragraph is a good suggestion. I'll make some revisions to make it clearer.

I find the memory configuration is slightly different from the MONITOR.INC chart that Ron show in his response. It concerns the 100h (256 decimal) word memory in the TMS320C25, called B0. The text in MONITOR.DOCS states the configuring process correctly, however.

When the DSP-93 is in the reset mode (which can be a result of a pressing the reset button, or from a soft-reset as result of the monitor "R" (reset) command), B0 is configured as DATA memory occupying 0200h - 02FFh.

When a "G" command is issued to the monitor, it puts the DSP-93 in the high speed mode and reconfigures B0 to PROGRAM. When B0 is in the program mode it occupies FF00h - FFFFh (upper end of the space occupied by the second 32K of SRAM).

With B0 configured as DATA during the slow speed mode, when program loading takes place, you can load program into B0 by preceding the source code by .ORG 0200h. When the loader is finished it does the "G" thing and B0 become program. You can jump to from the normal program start address of 1000h to FF00h and begin executing out of B0 (providing the code in B0 works correctly from the new memory position).

Also 0400h - 0FFFh holds the monitor. I don't believe SRAM can be accessed below 0400h as this is reserved for on-chip memory (the TI manual says some strobe lines are inactive when internal memory is accessed).

Based on my probing, here is how I would show the memory layout,

****AFTER A "G" COMMAND**.**

PROGRAM	DATA
0000 Interrupts and Reserved	0000 TMS320C25 MEMORY MAPPED REGISTERS
001F -----	0005 ----- Reserved
	0060 ----- On DSP Block B2
0400 ----- Beginning of usable SRAM. Holds copy of Monitor from ROM	007F ----- 01FF ----- 0200 ----- On DSP Block B0 **IF CNFD instruction issued**
	02FF ----- 0300 ----- On DSP Block B1
	03FF ----- 0400 ----- Page 8 Data Memory Beginning of usable SRAM
0FFF ----- 1000 TINT 1002 RINT 1004 XINT 1006 TRAP 1008 ----- Loader branches to 1008. User PROGRAM Memory Space First 32K	
	User DATA Memory Space First 32 K
7FFF ----- 8000 ----- User PROGRAM Memory Space Second 32 K	7FFF ----- 8000 ----- User DATA Memory Space Second 32 K
F000 ----- Copy of Sin Table from ROM	
F86F -----	
FF00 ----- On DSP Block B0	
FFFF -----	FFFF -----

One thing I found most confusing was PROGRAM versus DATA memory. When it comes to executing instructions they are SEPARATE. For example, there are no instructions to move one location in program memory to another, and just one for data-to-data memory moves. Two pairs of special instructions move words between program-to-data and in the reverse direction. The fact that what is program and data changes makes it all the more confusing.

An easy way to start to learning about the memory configuration is to use Dump and Fill and try storing, then dumping locations when the machine is in slow ("R") versus fast ("G") modes. Keep in mind that the monitor uses part of B0 and 0400 - 0FFF program SRAM.

The other thing I found most useful was to start with something REALLY SIMPLE. I modified TESTLEDS.ASM to turn on #1, then #1 and #2, then #2, etc. I got a zillion insights just doing that (and didn't seem so simple until I got it working!). Slowly it all begins to unfold.

We should keep in touch on the CW app.

73's
Don, K4JPJ

33. Wall Transformer

From: Carol Byers <crlbyers@garlic.com>
Date: Mon, 6 Feb 1995 21:23:39 -0800 (PST)
To: hardware dsp-93 <dsp-93@tapr.org>
Message-ID: <Pine.A32.3.91.950206212154.5794A-100000@garlic.com>
Rendered body type: text/plain

Have not received the replacement wall transformer ... wondering if anyone else is having the same problem ???
Carol, W9HGI

34. Re: [DSP-93:316] Wall Transformer

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 7 Feb 1995 02:27:37 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199502070827.CAA24494@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

Carol - you might call Dorothy at the office and double check on the shipping information and such.

She did tell me that it went out first of last week (or maybe the previous week) you should have gotten it.

We can track it since it went UPS. Just need to call Dorothy and get her on it :-)

Greg

According to Carol Byers:

>
> Have not received the replacement wall transformer ... wondering if
> anyone else is having the same problem ???
> Carol, W9HGI
>
>

35. request

From: matem@ipv36.unipv.it (dip. Matematica- Rossella)
Date: Tue, 7 Feb 1995 10:34:49 +0100
To: dsp-93@tapr.org
Message-ID: <9502070934.AA07158@ipv36>
Rendered body type: text/plain

Help!!!!I have problems to download the files jan.95 and feb.95.Sorry but am a beginner.....on this protocoll.Can anybody help me????Thanks in advance from in3dyg 5077-tapr internet matem@ipv36.unipv.it

36. Re: [DSP-93:318] request

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 7 Feb 1995 07:19:39 -0600
To: dsp-93@tapr.org
Message-ID: <ab5d22510102100434a6@[204.96.0.79]>
Rendered body type: text/plain

>Help!!!!I have problems to download the files jan.95 and feb.95.Sorry but am a
>beginner.....on this protocoll.Can anybody help me????Thanks in advance from
>in3dyg 5077-tapr internet matem@ipv36.unipv.it

Don't know what you did but the procedure is:

Send a request to listserv@tapr.org with a message of:

get dsp-93 jan.95
get dsp-93 feb.95

Ron W5RKN

also:
w5rkn@amsat.org

37. request help

From: matem@ipv36.unipv.it (dip. Matematica- Rossella)
Date: Tue, 7 Feb 1995 14:21:11 +0100
To: dsp-93@tapr.org
Message-ID: <9502071321.AA08045@ipv36>

Rendered body type: text/plain

73 to the dsp-93 staff

I have assembled the kit but don't work. After the power on, the power led is on but the led 1 don't light up. The reset on pin 7 of u116 is high and goes low when I push reset. At the prompt appear a square instead of *.

All solder connection, voltages checked. The data lines rest high at the reset...

Any suggestion? Thanks in advance from in3dyg franco dellantonia

matem@ipv36.unipv.it

38. From DL3DA on KO-23

From: rparsons@bga.com (Ronald G. Parsons)

Date: Tue, 7 Feb 1995 08:02:42 -0600

To: dsp-93@tapr.org

Message-ID: <ab5d270b0302100450d4@[204.96.0.79]>

Rendered body type: text/plain

Can someone comment on the HF RTTY question below?

From: DL3DA

To: W5RKN

Subject: Some more experiments

Keywords: DSP-93

To: W5RKN

From: DL3DA

Time: 231104 UTC

Date: 06FEB95

Title: Some more experiments

Hello Ron,

I tried the DSP-93 for decoding the A0-13 beacon. To get a good copy, the signal had to be around 20 dB above noise. Then I received some MET5 APT pictures, processed them with a picture viewer and they were good quality.

About low speed HF (RTTY etc), do you think, one can take the 300 Baud AFSK and try to match it? The TASM assembler is working fine and with the time, I think I will understand the TMS code.

73, Karl DL3DA

Ron W5RKN

also:

w5rkn@amsat.org

39. Re: [DSP-93:320] request help

From: rparsons@bga.com (Ronald G. Parsons)

Date: Tue, 7 Feb 1995 08:51:44 -0600

To: dsp-93@tapr.org

Message-ID: <ab5d2e42040210040312@[204.96.0.79]>

Rendered body type: text/plain

Franco,

Have you made all the changes listed in the Build Update (Latest Version dated 2 Feb)?

>73 to the dsp-93 staff

>I have assembled the kit but don't work. After the power on, the power led is

>on but the led 1 don't light up. The reset on pin 7 of u116 is high and goes

>low when I push reset. At the prompt appear a square instead of *.

>All solder connection, voltages checked. The data lines rest high at the reset...

>Any suggestion? Thanks in advance from in3dyg franco dellantonia

>matem@ipv36.unipv.it

Ron W5RKN

also:

w5rkn@amsat.org

40. Re: [DSP-93:318] request

From: Greg Jones <gjones@tenet.edu>
Date: Tue, 7 Feb 1995 10:05:48 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199502071605.KAA26142@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

What was the error and were you using the file request from listserv ?

If you were using the listserv, you might try again, we recently had a problem which was corrected.

Greg

According to dip. Matematica- Rossella:

>
> Help!!!!I have problems to download the files jan.95 and feb.95.Sorry but am a
> beginner.....on this protocoll.Can anybody help me????Thanks in advance from
> in3dyg 5077-tapr internet matem@ipv36.unipv.it
>

41. RE: [DSP-93:315] Memory config

From: CECIL.RFM@sbridge.rfm.com (Cecil, Lon; X605)
Date: Tue, 07 Feb 95 09:22
To: dsp-93@tapr.org (DEHaselw)
Message-ID: <9502071528.AA13759@rfm.com>
Rendered body type: text/plain

FORWARDED MESSAGE from Donald E. Haselwood (DEHaselw @ SMTP
DH> {dsp-93@tapr.org}) at 6/02/95 22:23

DH> The other thing I found most useful was to start with something
DH> REALLY SIMPLE. I modified TESTLEDS.ASM to turn on #1, then #1
DH> and #2, then #2, etc. I got a zillion insights just doing that
DH> (and didn't seem so simple until I got it working!). Slowly it
DH> all begins to unfold.

DH>

DH> We should keep in touch on the CW app.

DH>

DH> 73's

DH> Don, K4JPJ

***** NOTES from Cecil, Lon; X605 (CECIL @ RFM) at 7/02/95 09:05

Since the LEDs are not all on one port address, TESTLEDS was a response to the need for a very simple diagnostic and starting program.

The code for lighting/reseting each LED is short, so you can insert the code block (inline!!) to indicate that the step actually worked. The stack depth is very limited in DSP processors, so you only go 2 calls deep in most code.

Some of the modem code in the DSP-93 disks was so close on execution time that adding a single LED flash code would exceed the available process time.

Lon Cecil WB5PKJ

42. MFJ-1270B KISS (of death)

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 7 Feb 1995 10:17:10 -0600
To: dsp-93@tapr.org
Message-ID: <ab5d4cc1000210042d0e@[204.96.0.79]>
Rendered body type: text/plain

When I am using my MFJ-1270B with the DSP-93 (in 9600 bps satellite service) and the MFJ is put into KISS mode but no signal is received for several minutes, the lights on the front panel of the MFJ will flash. Thereafter, the length of time the transmitter is keyed (after AOS) is much longer than usual.

Does anyone know what is causing this?

Ron W5RKN

also:
w5rkn@amsat.org

43. GIF FILES ?

From: crohrrer@VNET.IBM.COM
Date: Tue, 7 Feb 95 10:48:17 CST
To: dsp-93@TAPR.ORG

Message-ID: <m0rbt5S-0001cbC@dptsdp.sat.datapoint.com>
Rendered body type: text/plain

In the DOCS subdirectory of the DSP93 diskettes there is mention of HEADER.GIF in the PSK and PKT doc files. And I believe GIF files are referenced in other DOC files. Where do I get these GIF files?
73s Clem -NR3U

44. Re: [DSP-93:326] GIF FILES ?

From: "Mark L. Hammond" <hammond@camel.campbell.edu>
Date: Tue, 7 Feb 1995 11:58:09 -0500
To: dsp-93@tapr.org
Message-ID: <9502071651.AA00549@camel.campbell.edu>
Rendered body type: text/plain

Clem,

Is there something you need that did not come printed? I think the .GIF files got punted in lieu of the printed versions in the manual. The GIF files I recall were of the connector pins and the TNC disconnect header.

I think I need to correct the doc files to reflect this.

>In the DOCS subdirectory of the DSP93 diskettes there is mention of HEADER.GIF
>in the PSK and PKT doc files. And I believe GIF files are referenced in
>other DOC files. Where do I get these GIF files?
>73s Clem -NR3U

Mark L. Hammond, Ph. D. (KC4EBR)
hammond@camel.campbell.edu

Campbell University
Department of Biology
Buies Creek, NC 27506
1-919-893-1734 or
1-800-334-4111, ext. 1734

45. Re: [DSP-93:315] Memory config

From: Bob Stricklin <bstrick@tenet.edu>
Date: Tue, 7 Feb 1995 12:28:08 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199502071828.MAA09109@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

According to Donald E. Haselwood:

>
> Bill, NO LIK
>

With regards to your comments on B0, what do you think about a paragraph or so on B0 and just let the programmer put it in the state he wants. Your work and posting has shown that it can be used to move the sine table. This may be a good example to include.

> Putting the memories and sizes in the first paragraph is a good
> suggestion. I'll make some revisions to make it clearer.

Sounds good.

>
> I find the memory configuration is slightly different from the
> MONITOR.INC chart that Ron shows in his response. It concerns the
> 100h (256 decimal) word memory in the TMS320C25, called B0. The
> text in MONITOR.DOCS states the configuring process correctly,
> however.

The chart was added later without much time given to the state of B0.

.... Deleted some stuff here...

>
> Also 0400h - 0FFFh holds the monitor. I don't believe SRAM can
> be accessed below 0400h as this is reserved for on-chip memory
> (the TI manual says some strobe lines are inactive when internal
> memory is accessed).

Correct, can not use memory below 0400h.

```

>
> Based on my probing, here is how I would show the memory layout,
> **AFTER A "G" COMMAND**.
>
>          PROGRAM          DATA
>
> 0000 Interrupts          0000 TMS320C25
>      and                MEMORY MAPPED
>      Reserved           REGISTERS
> 001F -----          0005 -----
>                        Reserved
>                        0060 -----
>                        On DSP Block B2
> 0400 -----          007F -----
>      Beginning of
>      usable SRAM.       01FF -----
>      Holds copy of      0200 -----
>      Monitor from ROM   On DSP Block B0
>                          **IF CNFD instruction
>                          issued***
>                        02FF -----
>                        0300 -----
>                        On DSP Block B1
>                        03FF -----
>                        0400 -----
>                        Page 8 Data Memory
>                        Beginning of usable
> 0FFF -----          SRAM
> 1000 TINT
> 1002 RINT
> 1004 XINT
> 1006 TRAP
> 1008 -----
>      Loader branches
>      to 1008.
>      User PROGRAM       User DATA
>      Memory Space       Memory Space
>      First 32K          First 32 K
>
> 7FFF -----          7FFF -----
> 8000 -----          8000 -----
>      User PROGRAM       User DATA
>      Memory Space       Memory Space
>      Second 32 K        Second 32 K
>
> F000 -----
>      Copy of
>      Sin Table
>      from ROM
> F86F -----
>
> FF00 -----
>      On DSP Block B0
> FFFF -----          FFFF -----
>

```

At first glance it looks OK.

```

>
> One thing I found most confusing was PROGRAM versus DATA memory.
> When it comes to executing instructions they are SEPARATE. For
> example, there are no instructions to move one location in
> program memory to another, and just one for data-to-data memory
> moves. Two pairs of special instructions move words between
> program-to-data and in the reverse direction. The fact that what
> is program and data changes makes it all the more confusing.

```

Learning to work with a Harvard architecture can be slow but after you have a feel for it you will like it.

```

>
> An easy way to start to learning about the memory configuration
> is to use Dump and Fill and try storing, then dumping locations
> when the machine is in slow ("R") versus fast ("G") modes. Keep
> in mind that the monitor uses part of B0 and 0400 - 0FFF program
> SRAM.
>

```

I agree. Don't you just love that monitor?

> The other thing I found most useful was to start with something
> REALLY SIMPLE. I modified TESTLEDS.ASM to turn on #1, then #1
> and #2, then #2, etc. I got a zillion insights just doing that
> (and didn't seem so simple until I got it working!). Slowly it
> all begins to unfold.
>

Good advice.

> 73's
> Don, K4JPJ
>

Keep up the good work Don. Your posting lots of good an helpful information for others.

Bob Stricklin, N5BRG

46. Re: [DSP-93:320] request help

From: Bob Stricklin <bstrick@tenet.edu>
Date: Tue, 7 Feb 1995 12:33:02 -0600 (CST)
To: dsp-93@tapr.org
Message-ID: <199502071833.MAA09845@Kay-Abernathy.tenet.edu>
Rendered body type: text/plain

We have had two people with blank EPROMs. Do you have a way to check the EPROMs to be sure they have code programed in them? You should see the TAPR Copyright notice at the front of the EPROMs if so. You can read it using a standard EPROM programmer.

The fact that all your data lines are high makes me think this is your problem. Make sure data lines for both U102 and U103 are high though. I have not seen anyone with both chips blank.

Bob Stricklin, N5BRG

47. Re: [DSP-93:325] MFJ-1270B KISS (of death)

From: ljs@rain.org (L.J.Shepherd)
Date: Tue, 07 Feb 1995 11:24:49 -0800
To: dsp-93@tapr.org
Message-ID: <199502071922.LAA14951@coyote.rain.org>
Rendered body type: text/plain

Hello Ron:

I believe Lyle Johnson once told me that problem is related to the use of older eproms in your 1270B.....you need the latest update which will permit the initialization of the TNC just once, instead of every several minutes. I have the same problem here with an identical unit and have ordered and received a new eprom from TAPR. The earlier code had a timer that performed a reset if no data was received in x minutes after initialization.

Apparently there is some code related problem in the function of the subsequent resets generated the the "no DCD timer" in the early version, the initial reset works great, but subsequent resets result in faulty PTT function. I tried switching to a new eprom quite some time ago, but had a faulty chip.....I've never made time to replace it a second time. Hope this helps.....you might check with Lyle to verify my recollection of this ! Good luck..

73, Jim K6OYY

>When I am using my MFJ-1270B with the DSP-93 (in 9600 bps satellite
>service) and the MFJ is put into KISS mode but no signal is received for
>several minutes, the lights on the front panel of the MFJ will flash.
>Thereafter, the length of time the transmitter is keyed (after AOS) is much
>longer than usual.

>
>Does anyone know what is causing this?
>

>
>Ron W5RKN
>

>also:
>w5rkn@amsat.org
>

>
>
>

>

48. [DSP-93:315] MEMORY CONFIG

From: wtb@partyline.org
Date: Tue, 07 Feb 95 12:56:08
To: dsp-93@tapr.org
Message-ID: <9502071256.0I67A00@partyline.org>
Rendered body type: text/plain

Don K4JPJ

Thanks for your inputs on DSP93 memory config and usage. You are way ahead of me. Yoou keep leading and I may learn something yet. Will try to modify TESTLEDS at my next opportunity. I have been toying with the idea of a really elementary definition of the software process; idea, flowchart, C source code, assembly, run, and so forth of a very small program that would display one or two characters on the computer screen but haven't figured out where the DSP digitals fit in.

As for the CW application, I agree we should keep in touch. Sounds like we have the same thing in mind except that mine would be slow speed. I'm presently trying to read and understand the applicable portions of "Digital Communications-B.Sklar-1988-Prentice Hall Publ" which has a section on Detection of Binary Signals in Gaussian Noise and requires deep deep cogitation and mathematics. I'm not there yet.

73

Bill N0LIK wtb@partyline.org

49. Re: [DSP-93:330] Re: MFJ-1270B KISS (of death)

From: "Mark L. Hammond" <hammond@camel.campbell.edu>
Date: Tue, 7 Feb 1995 15:36:11 -0500
To: dsp-93@tapr.org
Message-ID: <9502072029.AA02338@camel.campbell.edu>
Rendered body type: text/plain

Guys,

My relatively new MFJ-1270C unit (bought last August) also does the "double LED double-blink" after several minutes of inactivity. It keeps repeating this all day everyday, since I have it in kiss mode running Wisp just about all the time. I guess I have never noticed any problem with its function, so I never questioned it.

Ron, is this how you would describe your LED flashes? "double LED double-blink"?

>Hello Ron:

> I believe Lyle Johnson once told me that problem is related to the
>use of older eproms in your 1270B.....you need the latest update which
>will permit the initialization of the TNC just once, instead of every
>several minutes. I have the same problem here with an identical unit and
>have ordered and received a new eprom from TAPR. The earlier code had a
>timer that performed a reset if no data was received in x minutes after
>initialization.
>Apparently there is some code related problem in the function of the
>subsequent resets generated the the "no DCD timer" in the early version, the
>intial reset works great, but subsequent resets result in faulty PTT
>function. I tried switching to a new eprom quite some time ago, but had a
>faulty chip.....I've never made time to replace it a second time.
>Hope this helps.....you might check with Lyle to verify my recollection of
>this ! Good luck..

73, Jim K6OYY

>

>

>

>

>

>

>

>>When I am using my MFJ-1270B with the DSP-93 (in 9600 bps satellite
>>service) and the MFJ is put into KISS mode but no signal is received for
>>several minutes, the lights on the front panel of the MFJ will flash.
>>Thereafter, the length of time the transmitter is keyed (after AOS) is much
>>longer than usual.

>>

>>Does anyone know what is causing this?

>>

>>

>>Ron W5RKN

>>

>>also:

>>w5rkn@amsat.org
>>
>>
>>
>>

Mark L. Hammond, Ph. D. (KC4EBR)
hammond@camel.campbell.edu

Campbell University
Department of Biology
Buies Creek, NC 27506
1-919-893-1734 or
1-800-334-4111, ext. 1734

50. Re: [DSP-93:325] MFJ-1270B KISS (of death) (fwd)

From: imotion@iu.net (Howard Goldstein) (by way of rparsons@bga.com (Ronald G. Parsons))
Date: Tue, 7 Feb 1995 14:55:38 -0600
To: dsp-93@tapr.org
Message-ID: <ab5d8ea800021004e390@[204.96.0.106]>
Rendered body type: text/plain

>According to Ronald G. Parsons:
>>From dsp-93@tapr.org Tue Feb 7 10:45:03 1995
>Date: Tue, 7 Feb 1995 10:30:21 -0600
>Message-Id: <ab5d4cc1000210042d0e@[204.96.0.79]>
>Reply-To: dsp-93@tapr.org
>Originator: dsp-93@tapr.org
>Sender: dsp-93@tapr.org
>Precedence: bulk
>From: rparsons@bga.com (Ronald G. Parsons)
>To: dsp-93@tapr.org
>Subject: [DSP-93:325] MFJ-1270B KISS (of death)
>X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas
>X-Comment: Tucson Amateur Packet Radio DSP-93 Kit SIG
>Content-Type: text/plain; charset="us-ascii"
>
>When I am using my MFJ-1270B with the DSP-93 (in 9600 bps satellite
>service) and the MFJ is put into KISS mode but no signal is received for
>several minutes, the lights on the front panel of the MFJ will flash.
>Thereafter, the length of time the transmitter is keyed (after AOS) is much
>longer than usual.
>
>Does anyone know what is causing this?
>

Ron is seeing the effects of a half-useful workaround for the KISS-jump-0 bug.

The work around to the work around is to send parameter 253 to the tnc. In Phil's net.exe, this would look like:
param ax0 253

Most folks don't notice the problem unless they're satellite ops (full duplex gets turned off when the silent period expires).

Greg, this is a FAQ. In FAQt, I get a lot of FAQs on TNC questions. Would you consider creating a TNC2-SIG for TNC-2 and clones on the dingus? I could compile the FAQs and post them occasionally as well as receive enhancement requests, distribute bug fixes and work arounds, etc

Howie

Howard Goldstein	"The trouble with children is	
N2WX	they are not returnable"	imotion@iu.net
InfoMotion, Inc.	Q. Crisp	
	http://dingus.n5lyt.ampr.org/~n2wx	

51. Re: [DSP-93:333] Re: MFJ-1270B KISS (of death) (fwd)

From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 7 Feb 1995 17:22:51 -0600
To: imotion@iu.net (Howard Goldstein)
Cc: dsp-93@tapr.org
Message-ID: <ab5daf5c020210048fe3@[204.96.0.106]>
Rendered body type: text/plain

Howie

```
>>When I am using my MFJ-1270B with the DSP-93 (in 9600 bps satellite
>>service) and the MFJ is put into KISS mode but no signal is received for
>>several minutes, the lights on the front panel of the MFJ will flash.
>>Thereafter, the length of time the transmitter is keyed (after AOS) is much
>>longer than usual.
>>
>>Does anyone know what is causing this?
>>
>
>Ron is seeing the effects of a half-useful workaround for the KISS-jump-0 bug.
>
>The work around to the work around is to send parameter 253 to the tnc. In
>Phil's net.exe, this would look like:
>  param ax0 253
>
>Most folks don't notice the problem unless they're satellite ops (fullduplex
>gets turned off when the silent period expires).
```

What happens when KISS has been on 3 minutes without signal, the STA and CON lights flash three times. If I send parameter 253 (I assume "param ax0 253" sends ASCII (decimal) 192 253 193 since "param ax0 255" sends 192 255 192) after KISS mode has started, the STA light comes on and stays on. Then at the 3 min mark, the STA and CON lights flash three times as before.

Am I doing something wrong?

Ron W5RKN

also:
w5rkn@amsat.org

52. DSP-93 interface

```
From: John Koster <jkoster@tenet.edu>
Date: Tue, 7 Feb 1995 19:01:19 -0600 (CST)
To: tnc95@tapr.org
Cc: DSP-93@tapr.org
Message-ID: <199502080101.TAA15247@Gayle-Gaston.tenet.edu>
Rendered body type: text/plain
```

I've been wrestling with the RS-232 control port interface for a while.

I see 2 (2.5?) options.

1. Pull U-211 from its socket and install an internal cable with a 16 pin DIP header on the DSP-93 end to plug into the U-211 socket. Put matching header on the TNC-95 end.
2. Install a DB9 connector on the TNC-95 such that it is directly above the control port DB9 on the DSP-95. Arrange the wiring on the TNC-95 end so that the external cable could be a short (1 or 2") piece of ribbon cable with IDC DB9s on each end.
- 2.5 Put a connector on the TNC-95 to match JP-201 to pick up the signals. Pull U-211, since the 'TTL' outputs of the 145406 can't be tristated.

Option 2.5 is not being considered real strongly because of the expensive connector relative to value provided. (costs too much in real estate also)

Comments?

John

53. Re: [DSP-93:325] MFJ-1270B KISS (of death)

```
From: Roy Welch <rdw@crl.com>
Date: Tue, 7 Feb 1995 09:03:44 -0800 (PST)
To: dsp-93@tapr.org
Cc: dsp-93@tapr.org
Message-ID: <Pine.SUN.3.91.950207090132.29027B-100000@crl2.crl.com>
Rendered body type: text/plain
```

On Tue, 7 Feb 1995, Ronald G. Parsons wrote:

- ```
> When I am using my MFJ-1270B with the DSP-93 (in 9600 bps satellite
> service) and the MFJ is put into KISS mode but no signal is received for
```

> several minutes, the lights on the front panel of the MFJ will flash.  
> Thereafter, the length of time the transmitter is keyed (after AOS) is much  
> longer than usual.  
>  
> Does anyone know what is causing this?  
>  
>  
> Ron W5RKN  
>  
Ron, is this using WiSP? And do you mean the length of time the  
transmitter is continually keyed up, or the length of time before the  
transmitter is keyed up.

73, Roy

---

## 54. Re: [DSP-93:335] DSP-93 interface

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 7 Feb 1995 19:59:07 -0600  
To: dsp-93@tapr.org  
Cc: tnc95@tapr.org  
Message-ID: <ab5dd12f03021004824f@[204.96.0.106]>  
Rendered body type: text/plain

This was posted on dsp-93 as well as tnc-95. Without a context, it will be  
a little confusing to the dsp-93 list members. This is a question regarding  
how a "mating" TNC in the DSP-93 box might interface with the DSP-93 serial  
port.

>I've been wrestling with the RS-232 control port interface for a while.  
>  
>I see 2 (2.5?) options.  
>  
>1. Pull U-211 from its socket and install an internal cable with a 16 pin  
>DIP header on the DSP-93 end to plug into the U-211 socket. Put matching  
>header on the TNC-95 end.

This would require separating the TNC card from the stack (assuming it is  
on top) and removing/replacing U-211/internal cable to revert the DSP-93 to  
be able to use its serial port for non-TNC-95 usage.

>2. Install a DB9 connector on the TNC-95 such that it is directly above  
>the control port DB9 on the DSP-95. Arrange the wiring on the TNC-95 end  
>so that the external cable could be a short (1 or 2") piece of ribbon cable  
>with IDC DB9s on each end.

This is good as all it would require is an external connection that could  
be installed/removed easily. The bad part is that the pinout on the TNC end  
would have to be "wierd" to allow for a short IDC ribbon connection. I  
think it would be better to have a custom "null-modem-like" cable to  
connect the two so that the DB-9 on the TNC end could be used as a  
"standard" serial connector.

>2.5 Put a connector on the TNC-95 to match JP-201 to pick up the  
>signals. Pull U-211, since the 'TTL' outputs of the 145406 can't be  
>tristated.  
>  
>Option 2.5 is not being considered real strongly because of the expensive  
>connector relative to value provided. (costs too much in real estate also)

OK solution except for the killer requirements of the JP201 mate which  
would have little other use (?). Having to pull U211 suffers the same  
problems as 1. above.

>Comments?  
>  
>John  
>

I'd vote for number 2.

Ron W5RKN

also:  
w5rkn@amsat.org

## 55. Re: [DSP-93:332] Re: MFJ-1270B KISS (of death)

From: Roy Welch <rdw@crl.com>  
Date: Tue, 7 Feb 1995 12:59:58 -0800 (PST)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950207125342.22170B-100000@crl9.crl.com>  
Rendered body type: text/plain

Now I know what the problem is. It is indeed the KISS code in the EPROM. The original 1.1.8 TAPR code had the same problem. The writer of the KISS code did something to cause this. TAPR modified the 1.1.8 to revert back to the 1.1.7 KISS code, included it with the 1.1.8 AX25 code and named it 1.1.8b. Evidently a bunch of manufacturers never went back and made similar changes until later. Every few minutes of no activity results in the KISS mode being exited as I recall it. The TAPR 1.1.8b and the current 1.1.9 are free of this.

73, Roy

On Tue, 7 Feb 1995, Mark L. Hammond wrote:

> Guys,  
>  
> My relatively new MFJ-1270C unit (bought last August) also does the "double  
> LED double-blink" after several minutes of inactivity. It keeps repeating  
> this all day everyday, since I have it in kiss mode running Wisp just about  
> all the time. I guess I have never noticed any problem with its function,  
> so I never questioned it.  
>  
> Ron, is this how you would describe your LED flashes? "double LED  
> double-blink"?  
>  
>  
> >Hello Ron:  
> > I believe Lyle Johnson once told me that problem is related to the  
> >use of older eproms in your 1270B.....you need the latest update which  
> >will permit the initialization of the TNC just once, instead of every  
> >several minutes. I have the same problem here with an identical unit and  
> >have ordered and received a new eprom from TAPR. The earlier code had a  
> >timer that performed a reset if no data was received in x minutes after  
> >initialization.  
> >Apparently there is some code related problem in the function of the  
> >subsequent resets generated the the "no DCD timer" in the early version, the  
> >initial reset works great, but subsequent resets result in faulty PTT  
> >function. I tried switching to a new eprom quite some time ago, but had a  
> >faulty chip.....I've never made time to replace it a second time.  
> >Hope this helps.....you might check with Lyle to verify my recollection of  
> >this ! Good luck..

73, Jim K6OYY

> >  
> >  
> >  
> >  
> >  
> >  
> >  
> >  
> >  
> >When I am using my MFJ-1270B with the DSP-93 (in 9600 bps satellite  
> >>service) and the MFJ is put into KISS mode but no signal is received for  
> >>several minutes, the lights on the front panel of the MFJ will flash.  
> >>Thereafter, the length of time the transmitter is keyed (after AOS) is much  
> >>longer than usual.  
> >>  
> >>Does anyone know what is causing this?  
> >>  
> >>  
> >>Ron W5RKN  
> >>  
> >>also:  
> >>w5rkn@amsat.org  
> >>  
> >>  
> >>  
> >>  
> -----  
> Mark L. Hammond, Ph. D. (KC4EBR)  
> hammond@camel.campbell.edu  
>  
> Campbell University  
> Department of Biology  
> Buies Creek, NC 27506  
> 1-919-893-1734 or



> 1-800-334-4111, ext. 1734  
>  
>

---

## 56. Re: [DSP-93:334] Re: MFJ-1270B KISS (of death)

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 8 Feb 1995 07:31:59 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab5e750a0502100401c6@[204.96.0.106]>  
Rendered body type: text/plain

Jim,

>> What happens when KISS has been on 3 minutes without signal, the STA and  
>> CON lights flash three times. If I send parameter 253 (I assume "param ax0  
>> 253" sends ASCII (decimal) 192 253 193 since "param ax0 255" sends 192 255  
>> 192) after KISS mode has started, the STA light comes on and stays on. Then  
>> at the 3 min mark, the STA and CON lights flash three times as before.

>  
>Try sending just 192 253 192. (Standard KISS has no checksums,  
>which is what you seem to be expecting.)  
>

>73, Jim 7J1AJH/AI8A 7j1ajh@amsat.org

That's what I tried to say I did (that was a typo above). I sent it after I  
went into KISS mode. It didn't work - just turned on the STA light.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 57. Re: [DSP-93:337] Re: DSP-93 interface

From: rdavis@qualcomm.com (Roy Davis)  
Date: Wed, 08 Feb 1995 09:42:58 -0800  
To: dsp-93@tapr.org  
Message-ID: <199502081746.JAA22405@qualcomm.com>  
Rendered body type: text/plain

>This was posted on dsp-93 as well as tnc-95. Without a context, it will be  
>a little confusing to the dsp-93 list members. This is a question regarding  
>how a "mating" TNC in the DSP-93 box might interface with the DSP-93 serial  
>port.

Thanks for clearing this up. I didn't know there was a TNC-95 project going  
on. I will be interested in getting one.

>>2. Install a DB9 connector on the TNC-95 such that it is directly above  
>>the control port DB9 on the DSP-95. Arrange the wiring on the TNC-95 end  
>>so that the external cable could be a short (1 or 2") piece of ribbon cable  
>>with IDC DB9s on each end.

>  
>This is good as all it would require is an external connection that could  
>be installed/removed easily. The bad part is that the pinout on the TNC end  
>would have to be "wierd" to allow for a short IDC ribbon connection. I  
>think it would be better to have a custom "null-modem-like" cable to  
>connect the two so that the DB-9 on the TNC end could be used as a  
>"standard" serial connector.

I plan on using this DSP hardware for several uses, so I vote for the  
external connection. Also, I'd rather solder up 9 pins and have standard  
pinouts than have to make a weird computer cable.

Roy

---

## 58. Re: [DSP-93:338] Re: MFJ-1270B KISS (of death)

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 8 Feb 1995 12:18:12 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab5ebabe100210045b95@[204.96.0.106]>  
Rendered body type: text/plain

>Now I know what the problem is. It is indeed the KISS code in the  
>EPROM. The original 1.1.8 TAPR code had the same problem. The writer of  
>the KISS code did something to cause this. TAPR modified the 1.1.8 to  
>revert back to the 1.1.7 KISS code, included it with the 1.1.8 AX25 code  
>and named it 1.1.8b. Evidently a bunch of manufacturers never went back

>and made similar changes until later. Every few minutes of no activity  
>results in the KISS mode being exited as I recall it. The TAPR 1.1.8b  
>and the current 1.1.9 are free of this.  
>  
>73, Roy

Will the TAPR 1.1.9 ROMS work in the MFJ 1270B?

Mine are labeled:  
MFJ ENTERPRISES INC TNC-2  
AX.25 Level 2 Version 2.0 + FAX  
Release 1.2.9 12/23/92 - 32K RAM  
Checksum \$17

I assume TAPR sells these (yes, i do know how to find out).

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 59. Re: [DSP-93:336] Re: MFJ-1270B KISS (of death)

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 8 Feb 1995 10:31:52 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab5ea0b00902100442ac@[204.96.0.106]>  
Rendered body type: text/plain

>On Tue, 7 Feb 1995, Ronald G. Parsons wrote:  
>  
>> When I am using my MFJ-1270B with the DSP-93 (in 9600 bps satellite  
>> service) and the MFJ is put into KISS mode but no signal is received for  
>> several minutes, the lights on the front panel of the MFJ will flash.  
>> Thereafter, the length of time the transmitter is keyed (after AOS) is much  
>> longer than usual.  
>>  
>> Does anyone know what is causing this?  
>>  
>>  
>> Ron W5RKN  
>>  
>Ron, is this using WiSP? And do you mean the length of time the  
>transmitter is continually keyed up, or the length of time before the  
>transmitter is keyed up.  
>  
>73, Roy

It is three minutes after the TNC is put into KISS mode (i.e., after  
WiSP-GSC starts MSPE) and no data is received by the TNC (i.e., no signal).  
Has nothing to do with PTT.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 60. Re: [DSP-93:333] Re: MFJ-1270B KISS (of death) (fwd)

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 8 Feb 1995 10:31:38 -0600  
To: imotion@iu.net (Howard Goldstein)  
Cc: dsp-93@tapr.org  
Message-ID: <ab5e9ec307021004cef4@[204.96.0.106]>  
Rendered body type: text/plain

Howie  
>>  
>>What happens when KISS has been on 3 minutes without signal, the STA and  
>>CON lights flash three times. If I send parameter 253 (I assume "param ax0  
>>253" sends ASCII (decimal) 192 253 193 since "param ax0 255" sends 192 255  
>>192) after KISS mode has started, the STA light comes on and stays on. Then  
>>at the 3 min mark, the STA and CON lights flash three times as before.  
>>  
>>Am I doing something wrong?  
>  
>Probably not. What eeprom release date? Might try param ax0 250 (I think we  
>changed #s at some point). Let me know if the latter works please.

>  
>Howie

EPR0M data:

MFJ ENTERPRISES INC TNC-2  
AX.25 Level 2 Version 2.0 + FAX  
Release 1.2.9 12/23/92 - 32K RAM  
Checksum \$17  
cmd:

Tried 192 250 192 and still got the double light/triple blink.

Is the fix (whatever it is) supposed to eliminate the blinks. I assume I am supposed to send the 192 xxx 192 while in KISS mode.

What does the bug cause?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 61. Re: [DSP-93:338] Re: MFJ-1270B KISS (of death)

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 8 Feb 1995 15:13:40 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab5ee400140210040d1c@[204.96.0.106]>  
Rendered body type: text/plain

>Now I know what the problem is. It is indeed the KISS code in the  
>EPR0M. The original 1.1.8 TAPR code had the same problem. The writer of  
>the KISS code did something to cause this. TAPR modified the 1.1.8 to  
>revert back to the 1.1.7 KISS code, included it with the 1.1.8 AX25 code  
>and named it 1.1.8b. Evidently a bunch of manufacturers never went back  
>and made similar changes until later. Every few minutes of no activity  
>results in the KISS mode being exited as I recall it. The TAPR 1.1.8b  
>and the current 1.1.9 are free of this.  
>  
>73, Roy

1.1.8a is on the TAPR pricelist but not 1.1.8b nor 1.1.9.

Who do you know that I don't?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 62. Re: [DSP-93:333] Re: MFJ-1270B KISS (of death)

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 9 Feb 1995 06:34:52 -0600  
To: imotion@iu.net (Howard Goldstein)  
Cc: dsp-93@tapr.org  
Message-ID: <ab5fbbel00021004c5a4@[204.96.0.106]>  
Rendered body type: text/plain

Howie

>  
>The KISS bug causes a jump to 0000 after an undefined (but longer than 3  
>minute) period of receive inactivity. I haven't caught it with the ICE  
>attached but discovered it when I relocated some code from 0000 and  
>discovered the new stuff at 0000 was inexplicably running some time after  
>kiss started.  
>  
>I'm puzzled because 192 253 192 works here. You can escape from kiss with  
>192 255 192, yes?  
>  
>Howie

Yes!

I got bamboozled by Windows. I discovered that the Windows editors do not behave with respect to alt-keypad decimal ASCII data entry as does DOS. Finally, dug out my DOS manual and used DEBUG. (Should have tested on my

Mac where I know what I am doing).

It turns out that if I REALLY send 192 253 192 after I go into KISS mode, the watchdog does NOT bark. Sorry for all the confusion. Now I need to figure out how to get WiSP to put the muzzle on the dog.

BTW, the dog barks exactly 180 seconds after entry into KISS mode.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 63. New Cable Caution

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Thu, 9 Feb 1995 08:06:51 -0500  
To: dsp93dev@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9502091300.AA22040@camel.campbell.edu>  
Rendered body type: text/plain

Gang,

For those of you that just got the new cable (DB25 female, 2 - 2x10 IDC headers on it; runs from 2x10 header between U213 and U214 to back panel),

\*\*\*\*\* CHECK YOUR CABLE FOR CONTINUITY \*\*\*\*\*

Those of you with a functional DSP-93 (passes all tests) that can't get the TNC interfaced correctly, you should also

\*\*\*\*\* CHECK YOUR CABLE FOR CONTINUITY \*\*\*\*\*

I spent about a day and a half figuring out that the cable did not have the IDC connectors pressed on hard enough to make contact on a couple of the wires.

My observation was that things worked, sort of. My PTT line would "stutter" or almost "purrr" from going off and on very rapidly. I had seen this before when the ground wire on my old homebrew cable had broken. So, I checked the continuity thru the cable, and sure enough the cable was open on a couple wires. Failure to successfully interface your functional DSP-93 to your TNC may be from an open connection like the ones I found.

Several good CAREFUL smacks with my hammer and I got ONE of the IDC connectors to make contact. The other one still needs some more attention.....

Greg, looks like we are going to have to get Dorothy to JUMP up and down on the connectors :)

Who was that LIMP-WRISTED cable man anyhow??

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

### 64. Re: [DSP-93:341] Re: MFJ-1270B KISS (of death)

From: Roy Welch <rdw@crl.com>  
Date: Wed, 8 Feb 1995 17:52:06 -0800 (PST)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950208175014.22789A-100000@crl.crl.com>  
Rendered body type: text/plain

On Wed, 8 Feb 1995, Ronald G. Parsons wrote:

> >Now I know what the problem is. It is indeed the KISS code in the  
> >EPROM. The original 1.1.8 TAPR code had the same problem. The writer of  
> >the KISS code did something to cause this. TAPR modified the 1.1.8 to  
> >revert back to the 1.1.7 KISS code, included it with the 1.1.8 AX25 code  
> >and named it 1.1.8b. Evidently a bunch of manufacturers never went back

> >and made similar changes until later. Every few minutes of no activity  
> >results in the KISS mode being exited as I recall it. The TAPR 1.1.8b  
> >and the current 1.1.9 are free of this.  
> >  
> >73, Roy  
> >  
> >  
> Will the TAPR 1.1.9 ROMS work in the MFJ 1270B?

If it is a TNC2 clone it should. The work in my PacComm TNC-200.

> Mine are labeled:  
> MFJ ENTERPRISES INC TNC-2  
> AX.25 Level 2 Version 2.0 + FAX  
> Release 1.2.9 12/23/92 - 32K RAM  
> Checksum \$17  
> >  
> I assume TAPR sells these (yes, i do know how to find out).

Yes, they do.

> Ron W5RKN  
> >  
> 73, Roy

---

## 65. Re: [DSP-93:346] New Cable Caution

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 9 Feb 1995 11:50:30 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199502091750.LAA25786@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

Hi Mark - no one in the dsp-93 production run got this series you are referring to. These were some additional cables the Tucson, Packit company put together for the beta-testers who had not received a new cable. The ones that were sent out, I looked over for each kit, and Bob got three sets of, and they all looked okay.

I'll make a note in the build doc for builders to double check the cables.

So - no need to worry first production builders, although you might want to just double check it.

Cheers - Greg

According to Mark L. Hammond:

>  
> Gang,  
>  
> For those of you that just got the new cable (DB25 female, 2 - 2x10 IDC  
> headers on it; runs from 2x10 header between U213 and U214 to back panel),  
>  
> \*\*\*\*\* CHECK YOUR CABLE FOR CONTINUITY \*\*\*\*\*  
>  
>  
> Those of you with a functional DSP-93 (passes all tests) that can't get the  
> TNC interfaced correctly, you should also  
>  
> \*\*\*\*\* CHECK YOUR CABLE FOR CONTINUITY \*\*\*\*\*  
>  
>  
> I spent about a day and a half figuring out that the cable did not have the  
> IDC connectors pressed on hard enough to make contact on a couple of the  
> wires.  
>  
> My observation was that things worked, sort of. My PTT line would  
> "stutter" or almost "purrr" from going off and on very rapidly. I had seen  
> this before when the ground wire on my old homebrew cable had broken. So,  
> I checked the continuity thru the cable, and sure enough the cable was open  
> on a couple wires. Failure to successfully interface your functional  
> DSP-93 to your TNC may be from an open connection like the ones I found.  
>  
> Several good CAREFUL smacks with my hammer and I got ONE of the IDC  
> connectors to make contact. The other one still needs some more  
> attention.....  
>  
> Greg, looks like we are going to have to get Dorothy to JUMP up and down on  
> the connectors :)  
>

> Who was that LIMP-WRISTED cable man anyhow??  
> -----  
> Mark L. Hammond, Ph. D. (KC4EBR)  
> hammond@camel.campbell.edu  
>  
> Campbell University  
> Department of Biology  
> Buies Creek, NC 27506  
> 1-919-893-1734 or  
> 1-800-334-4111, ext. 1734  
>  
>  
>

---

## 66. Re: [DSP-93:348] Re: New Cable Caution

From: Roy Welch <rdw@crl.com>  
Date: Thu, 9 Feb 1995 16:51:46 -0800 (PST)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950209165032.19687A-100000@crl9.crl.com>  
Rendered body type: text/plain

On Thu, 9 Feb 1995, Greg Jones wrote:

> Hi Mark - no one in the dsp-93 production run got this series you are  
> referring to. These were some additional cables the Tucson, Packit company  
> put together for the beta-testers who had not received a new cable. The  
> ones that were sent out, I looked over for each kit, and Bob got three sets  
> of, and they all looked okay.  
>  
> I'll make a note in the build doc for builders to double check the cables.  
>  
> So - no need to worry first production builders, although you might want to  
> just double check it.  
>  
> Cheers - Greg  
>  
> According to Mark L. Hammond:

My cable and pot arrived and the cable seems ok here.  
73, Roy

---

## 67. RE: [DSP-93:344] Re: MFJ-1270B KISS (of death)

From: jedavis@CERF.NET  
Date: Thu, 9 Feb 95 19:56:26 PST  
To: dsp-93@tapr.org  
Message-ID: <Chameleon.4.01.2.950209200138.jedavis@>  
Rendered body type: text/plain

>  
>1.1.8a is on the TAPR pricelist but not 1.1.8b nor 1.1.9.

>  
>Who do you know that I don't?

>  
>  
>Ron W5RKN

>  
>also:  
>w5rkn@amsat.org

>  
I mailed the office 1.1.9 eproms yesterday. They should be available almost immediately. I used beta 1.1.9 and am currently using the release version on ko-23. I do not experience any problem if I leave the TNC2 on for multiple passes.

--

Jack Davis - WA4EJR

---

## 68. Re: DSP-93

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 10 Feb 1995 07:36:07 -0600  
To: geofft@suburbia.apana.org.au (Geoff Taurins)  
Cc: dsp-93@tapr.org  
Message-ID: <ab6118e404021004726e@[204.96.0.162]>  
Rendered body type: text/plain

Geoff,

I'd suggest you send these items to dsp-93@tapr.org. Then all of us can learn from others successes/problems.

>Greetings fellow DSP-93 user. Name here is Geoff and am a real novice when  
>it comes to DSP stuff. Have built the unit and it operates as it should???  
>A couple of questions you may or maynot have the answers to.  
>The problems below are also being experienced by VK3K05 who lives down the  
>road which makes me wonder if we have both made the same mistakes ( we built  
>the units seperately ) or if there is another unseen cant see for looking  
>type mistake...  
>

>1. Why wont the 9600FSK sat stuff work on port 2 anywhere near as well as  
>on  
> port 1 ( software has been recompiled for port 2 ).  
> Works well on port 1 with a mfj1274 ( but not quite as well as the  
>mfj9600 board I had used )( about 5% worse from the figures I have  
>collected )

Are you sure you have the modems and the gain pots set up the same? There are versions of the FSK modems in the ROM (Program R & S). Are these the ones you are using? Are you getting the same signal at TP1 for both port 1 and 2?

>2. I cant get the 9600 stuff to work with paKet ( packet term prog ) to play  
> full dupe 9600 terrestrial stuff. The only way I can anything out of it is  
>to put the TNC into kiss mode ?????

I have had no problem using the FSK modems on terrestrial packet in FULLDUP mode. There is a Half duplex modem in development. I use a plain terminal emulator and Connect mode.

>3. 1200 AFSK works well on both ports...

Good.

>4. 1200 PSK works but is a major hassle as it only works on port 1 so I have to  
> change cables between port 1 and 2 as the FSK and PSK come from different  
> part of the radio and hence 2 cables. I could play 9600 on port 2 which  
>would solve the problem but as per point 1, it doesnt work as well.

Are you using the modems in the ROM? If not, give me details.

>5. Is there a Yaesu FT736 version of the 1200 PSK modems??

What differences are needed?

>6. Are there any more audio filters being developed. The original blurb about  
> the unit mentioned several audio filters but only the CW filter was shipped.  
> Any idea if others are under developement, ie ( noise filters etc ).

One of the beta testers was working on a very nice implementation of the audio filters, but shortly before the end of the beta, he dropped off. Don't know the curent status.

>7. Any word on the TNC board for the unit ??

Keep tuned.

>8. Is there any literature about programming the eproms as I have recompiled  
> some of the modems for different gains, ports and it work be nice to stick  
> them in the eprom to speed loading.

That would be a nice feature. I believe the current situation is that the ROMs need to be reassembled to add/change a modem.

>9. The 1200PSK modems cant be reset from the keyboard so another can be  
>selected  
> which is a pain if you want to use an automated station.

Look at the code I added to the PKT modem for this purpose. Then add it to the PSK source and re-assemble. I left that as "an exercise for the reader".

>Hope that is enough to keep you thinking. The kit went together without a  
>problem and worked 1st time, very impressed with the quality of the  
>assemmbly instructions and presentation ( only wish I knew more about DSP ).  
>Hope to hear from you soon...  
>

>73 Geoff VK3JDG @ uo22, ko23, ko25, vk3jdg@amsat.org

Dive in. Ask for help. Then we all learn.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 69. Re: [DSP-93:351] Re: DSP-93

From: Roy Welch <rdw@crl.com>  
Date: Fri, 10 Feb 1995 06:10:10 -0800 (PST)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950210060242.12776B-100000@crl3.crl.com>  
Rendered body type: text/plain

> 2. I cant get the 9600 stuff to work with paKet ( packet term prog ) to  
> play full dupe 9600 terrestrial stuff. The only way I can anything out  
> of it is to put the TNC into kiss mode ?????

> 73 Geoff VK3JDG @ uo22, ko23, ko25, vk3jdg@amsat.org

Goeff, is it that you are not copying anything at all, or that you are copying, but can't connect to anything? What kind of radio do you have? Are you connecting to your 9600 receiver audio through a capacitor other than the 10mf input capacitor in the DSP-93?

73, Roy -- W0SL

---

## 70. Message from VK5ZWA

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 10 Feb 1995 09:26:04 -0600  
To: dsp-93@tapr.org  
Cc: tapr@tapr.org  
Message-ID: <ab61339705021004b88a@[204.96.0.162]>  
Rendered body type: text/plain

Be careful about that R227!

From: VK5ZWA  
To: W5RKN  
Subject: DSP-93 Fixed  
Keywords:

-----  
To : W5RKN  
From: VK5ZWA  
Time: 005758UTC  
Date: 10 Feb 1995  
-----

Hello Ron,

Got the DSP93 up and running.

My fault, I dropped one leg of R227 (1.5k) into the wrong hole. The correct hole was 1/8 inch further out. In effect it put the resistor across pins 16 & 17 of the UART. No wonder it wouldn't oscillate! Really kicking myself for not picking it up sooner but it's not so obvious when you look at it.

I'll make up a few external cables over the next week and we're away!

Not sure if it's too late to stop any further action from TAPR re the replacement UART. If not don't worry about it.

Regards, Graeme, VK5ZWA, Adelaide, South Australia @ KO-23 & KO-25.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 71. Message from DL3DA

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 10 Feb 1995 09:26:09 -0600



To: dsp-93@tapr.org  
Cc: frank@tcet.unt.edu (Frank Perkins)  
Message-ID: <ab61349006021004f2d1@[204.96.0.162]>  
Rendered body type: text/plain

Via KO-23:

To: W5RKN  
From: DL3DA  
Time: 173719 UTC  
Date: 09FEB95  
Title: Now all okay

Hello Ron,

the message from Frank, WB5IPM declared everything and there is enough support so that I can do, what I want. Your relaying was a big help and I please you to relay the attached message back to Frank.

He also asked for a received APT GIF file. I'll try to upload one this weekend and will direct it immediately to his call sign.

Many thanks for your help.

73, Karl DL3DA in Goettingen

Hello Frank,

very glad about your comments. In fact you gave me the initial support. Let me answer to the three points in the same order:

1. AO-13 TLM reception

Yes, I have a G3RUH 400 baud modem, have also an afreg board somewhere. As you are interested, I will make some comparison during the next days and let you know the results. The terminal program in use here is a very normal packet terminal software named TERM, by DL5FBD. I like it, because it supports 16C550 UARTs and one can configure unusual port addresses and interrupts. I used it also for receiving APT.

2. APT reception

First I did process the downloaded files on a rather complicated way, converting them to GIF and then used my favorite FAX program JVFAX. But then I found a shareware picture viewer PV, which was loaded to KO-23 recently. It is able to read raw files and do all the processing. I have some antenna problems, thus upload of longer files make some problems, but I will load one this weekend, so you can take a look.

3. HFU\*.\*

Well, your comment declared all. My fault. Looked into the DOC file, also the first lines of ASM file, but overlooked the lines, telling that I/O is directed to the UART. Now all okay and I will try some HF. Again thanks for your answer, Frank.

73, Karl DL3DA in Goettingen

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 72. Ordering..

From: sv2qp@physics.auth.gr (Dictapanidis Sakis)  
Date: Fri, 10 Feb 95 18:35:14 +0200  
To: dsp-93@tapr.org  
Message-ID: <m0rcxT7-0000UFC@dptspd.sat.datapoint.com>  
Rendered body type: text/plain

I am a member (4270) of TAPR, and have subscribed also to the dsp-93 list

in order to watch closely the news on the project.

I would like to order the dsp-93 kit by e-mail or fax, but I read at the PSR, that the April second load has been closed already.

If you could please send me more info, in order to send you the details, Visa number, expiration date e.t.c.

We have a packet net here in Thessaloniki on uhf 9600 baud and I would like to get involved in the dsp-93 project. For the moment we work with the G3RUH and 9600 TAPR modems and dedicated transceivers ( D4-10).

email: sv2qp@physics.auth.gr  
sv2qp@olymp.ccf.auth.gr  
sv2qp@skiathos.physics.auth.gr

ax25: sv2qp@sv2jl.tsl.eu.gr  
amprnet: sv2qp@sv2tsl.ampr.org

tel: +31 857-533 fax: +31 863-056  
+31 99-8057

snail: Dictapanidis Sakis  
Papafi 40  
Thessaloniki 54639  
GREECE

.. 73 de Sakis

---

## 73. Eye Patterns

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 10 Feb 1995 10:10:05 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab613b46090210048674@[204.96.0.162]>  
Rendered body type: text/plain

I have had several questions regarding "eye patterns" on the DSP-93. The following is a edited [by me] version of a discussion of that by Frank WB5IPM. Blame any errors creeping in on me.

February 8, 1995 @ 20:30 CST

'Couple of points on the DSP-93 9600 bps modems:

1. U209 Pin 7 is the UNFILTERED signal going to the DSP-93 A/D converter. The G3RUH eye pattern test point is AFTER filtering. Apples and oranges....you would expect the filtered G3RUH eye pattern to be cleaner than the unfiltered signal in the DSP-93 before any dsp processing.
2. You can't see the eye pattern of the DSP-93 modem directly - it only exists in "dsp cyberspace".
3. I pumped the RX clock out in earlier versions of the modem, thinking I would need to drive the TNC with it. Turns out that the data clock recovery in the TNC "DCD state machine" is so good that I do not need to do this. I don't know if there is time to do this now with all the stuff we have added.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 74. Re: [DSP-93:355] Ordering..

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 10 Feb 1995 11:20:19 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199502101720.LAA12532@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

Good News --

TAPR is still taking orders for the April Production. Just call the office (817) 383-0000, fax (817) 566-2544 or you can e-mail your order to TAPR@TAPR.ORG (but many do not like to send their Visa/MC info over Internet).

The deadline in January set the number of units we were going to produce. We are doing a production of 175 units -- so there are still a number of kits available for this production.

Cheers - Greg

According to Dictapanidis Sakis:



Ron

From: VE3EGO  
To: W5RKN  
Subject: DSP93 CW Filter, Etc  
Keywords: Measurement

-----  
To : W5RKN  
From: VE3EGO  
Time: 014706UTC  
Date: 12 Feb 1995  
-----

Hi Ron,

This is the first time I have attempted to combine two messages in the interests of saving satellite time. Hope it works OK.

You just may be interested in the measurements that I have just made on the DSP93 CW filter. I compared the performance with the 100 Hz filter in the DSP9 by Timewave.

|                   | DSP93 CW | DSP9 CW |
|-------------------|----------|---------|
| Bandwidth         |          |         |
| approx 3 db down  | 100Hz    | 121 Hz  |
| Center Freq       | 727 Hz   | 739 Hz  |
| Bandwidth         |          |         |
| approx 60 dB down | 264 Hz   | 176 Hz  |

Both filters exhibit excellent performance. The measurements were made by injecting "white noise" into my FT1000D with its filters set at 2.4KHz. I used a DSP spectrum analyzer.

Of course the numbers do not tell the whole story. I have taken pictures of the spectrum of both filters and will upload them if you are interested in seeing them.

I have a question. The doc on the CW\_93.OBJ filter mentions that the code has a "pass thru" audio mode to make finding signals easy. How is this mode invoked?

Also if I want to look at the modem characteristics how can I get at the input and outputs... maybe they are in Cyberspace !!

Thanks,

To : W5RKN  
From: VE3EGO  
Time: 205043UTC  
Date: 11 Feb 1995  
-----

Hi Ron,

>Just happened to have a reply (aren't I good!).

You sure are !! haven't let me down yet Hi.

>2. You can't see the eye pattern of the DSP-93 modem directly - it only exists in "dsp cyberspace".

000H yes..Cyberspace Eh ! I expected something like that Ron. Must remember that one.

Guess it is not really necessary however the "eye" was useful when KO-23/KO-25 went down. The pattern told you that your TNC would be jammed up. BTW under the same circumstances would the DSP93 behave in a similar fashion ie jam up the TNC if the KO satellites were transmitting telemetry signals. Also there is quite a difference between the "eye" pattern of UO-22 and the other satellites. UO-22 is much more symmetrical and uniform.

BTW would you just happen to know if one of the DSP93 testers has used a PK232MBX with the DSP93. I would like to use my PK232MBX with the DSP93 simply because the Windows Software works reasonably well on HF applications.

also:  
w5rkn@amsat.org

```
> Second question is about the key components used in DSP-93. I mean:
>
> MAX 358 CPA
> ST16550P STARTECH (Any difference with a standard 16550 ?)
> TLC 2272CP
> TLC 32044CN
>
>Would it be possible to get photocopies of the data sheets for the a
>components from TAPR or any other source ?. If so, I would pay any e
```

>in copying/mailling. Would like to work with a complete information set of  
>this nice project.

I'll repost these to Internet for comment.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : K0-23, K0-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 78. Message from DL3DA

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 13 Feb 1995 08:14:36 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6513db07021004c417@[204.96.0.165]>  
Rendered body type: text/plain

Via K0-22:

From: DL3DA  
To: W5RKN  
Subject: U0-22 Download  
Keywords: none

-----  
To: W5RKN  
From: DL3DA  
Time: 214937 UTC  
Date: 12FEB95  
Title: U0-22 Download

Hello Ron,

no problem if you cannot get the file. It contains not much information,  
only a jpegged image from Meteosat. I am trying to send it to Frank on K0-23  
as promised, but due to my mispointing antennas it seems to be a hard job.

I have similar problems with U0-22. At certain times, depending on daytime  
and direction, download rate decreases, when the downlink frequency runs  
over a spurious signal, caused by the nearby digipeater. This signal is about  
90dB! down from the signal on its transmitting frequency. So I must live  
with it.

All DSP-93 functions are as expected. I am very content. What I just would  
like to know is, why anyone did this mix of bits for hardware access, i.e.  
LEDs, radios, gain.

73, Karl DL3DA in Goettingen

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 79. Message from DL1CR

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 13 Feb 1995 08:14:40 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6515670802100420ee@[204.96.0.165]>  
Rendered body type: text/plain

Via K0-22:

To : DL1CR  
From: W5RKN  
Time: 135014UTC  
Date: 13 Feb 1995

-----  
Hello Kurt,

>PKTP1.OBJ delivered the expected frames to the screen. However, with FSKP1.OBJ  
>there was no reaction of the DSP-93 to any of the input signals  
>(terrestrial  
>or space) from the discriminator of my FT-736R. As there is no .ASM file  
>on the  
>distribution disks, I could not try another gain setting.

Have you used other 9600 modems so you know that your radio, etc. works  
with 9600? If you have a scope, what p-p voltage do you see at TP1?  
It should be about 1V p-p, more is not needed.

>Would it be therefore possible that you upload the 9600Bd FSK.ASM in order to  
>allow for different gain settings? Or did I overlook something perhaps? Thanks  
>in advance.

TAPR has decided not to distribute the source. If you find a need a specific  
gain, I'll tell you what to do or send a new .OBJ.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : KO-23, KO-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 80. Message from VE3EGO

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 13 Feb 1995 08:14:44 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6517cd09021004b15a@[204.96.0.165]>  
Rendered body type: text/plain

Via KO-23:

To : VE3EGO  
From: W5RKN  
Time: 133231UTC  
Date: 13 Feb 1995  
-----

Hello Syd,

You are coming up with good questions for your operations "manual".  
I'll help with the answers.

>I am at the point to try to run a modem program. I have chosen to run  
>the 9600 baud full duplex satellite modem. With the Monitor I chose  
>PROGRAMS then entered ? and got the list of programs. I then entered  
>R for FSKP1 and LED 5,7 and 8 are lit. I do not know how to add the  
>Rn and Gn parameters.  
>  
>1. Are those parameters automatically entered when I select FSKP1

The -dGn and the -dRn are parameters to the assembler. The modems in ROM  
(FSK... and PKT...) have been assembled with R1 for modems ending in P1,  
R2 for modems ending with P2, and they had G4.

>2. If true, what do I do to change them.

You re-assemble them (see examples in ASmall.BAT) and then load the modem  
from the disk, rather than ROM.

>3. If not true, what do I have to do to enter these parameters  
> or is this a Don't Care situation ie it is one or the other.  
>

>I do not see any explanation in the Monitor.doc on this topic.

Monitor.doc would not cover this. The modems in ROM were a VERY late idea,  
and thus got short treatment in the docs.

>Also in the docs for the 9600 baud sat modem there is a statement  
>"I have DCD locked high" Does this mean that FSKP1 already has DCD  
>locked high or does it mean that somehow I must lock DCD high.

It means that the DCD line is turned on by the modem - thus making it full duplex only. New "unlocked DCD" modems, full and half duplex are being tested.

Keep up the good work.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : K0-23, K0-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 81. Changing Gain on FSK .OBJ files

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 13 Feb 1995 14:27:30 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6564280d021004a136@[204.96.0.165]>  
Rendered body type: text/plain

I have had a number of requests about changing the gain settings on the FSK modems. Since TAPR does not distribute the source for these modems, you may use the following procedure to change the gain settings.

There are 7 values for the gain setting (See PORTS.INC)

|       |      |     |             |            |
|-------|------|-----|-------------|------------|
| GAIN0 | .EQU | 00h | ; FEEDBACK  | Unity gain |
| GAIN1 | .EQU | 08h | ; FDBK R201 | Gain = 2   |
| GAIN2 | .EQU | 10h | ; FDBK R204 | Gain = 4   |
| GAIN3 | .EQU | 18h | ; FDBK R205 | Gain = 8   |
| GAIN4 | .EQU | 20h | ; FDBK R206 | Gain = 16  |
| GAIN5 | .EQU | 28h | ; FDBK R207 | Gain = 32  |
| GAIN6 | .EQU | 30h | ; FDBK R208 | Gain = 64  |

For FSKP1.OBJ and FSKISIP1.OBJ, the required change is in the third line:

```
:182030001180D00140256002E702FE801180C800CE37CE20D0010020CB
 ^^
```

The byte that needs changing is the one (25) marked with ^^ . Be sure you are looking at this in a monospaced font. Use the following table:

| Gain  | Value        |
|-------|--------------|
| GAIN0 | 05           |
| GAIN1 | 0D           |
| GAIN2 | 15           |
| GAIN3 | 1D           |
| GAIN4 | 25 (default) |
| GAIN5 | 2D           |
| GAIN6 | 35           |

For FSKP2.OBJ and FSKISIP2.OBJ, the required change is in the third line:

```
:182030001180D00140276002E702FE801180C800CE37CE20D0010020C9
 ^^
```

The byte that needs changing is the one (27) marked with ^^ . Be sure you are looking at this in a monospaced font. Use the following table:

| Gain  | Value |
|-------|-------|
| GAIN0 | 07    |
| GAIN1 | 0F    |
| GAIN2 | 17    |
| GAIN3 | 1F    |



GAIN4 27 (default)  
GAIN5 2F  
GAIN6 37

I hope this makes sense.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 82. Message from W6SHP

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 13 Feb 1995 14:28:08 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab656d610e021004cbce@[204.96.0.165]>  
Rendered body type: text/plain

Via KO-23:

To : W6SHP  
From: W5RKN  
Time: 195529UTC  
Date: 13 Feb 1995  
-----  
Hello Howard,

>I have just completed my DSP-93. It has passed all the tests and  
>runs the \*.obj test programs and the three test instrument  
>programs ok. This weekend I tried to get on the air and have  
>failed 100 percent in every effort. I won't go into everything  
>that I tried. But nothing works and I cannot figure out the DOC  
>instructions in many cases. I found the wrong pots are called  
>out by some DOC instructions.

Check the Build updates. The error was pointed out there. If you  
can get Internet access, that would be best. If not, the build  
updates are being uploaded here also.

The correct pots are: R213 and R214 are transmit levels.  
R215 and R216 are receive levels.

>Perhaps the easiest solution would be if you could let me know of  
>beta testers who use the PK-232 and FT-736R. The PSK programs  
>are for Kenwood and Icom rigs. Which is to be used for my rig?

Interestingly, there were no beta testers using the FT-736R.  
I'll post this on dsp-93@tapr.org and see if someone has the  
source changes for the FT-736R

>My PK-232 has a max speed of 9600 baud. Could this be a problem?

Not really. The serial port on the DSP-93 is 19.2 kbs but this is used  
for software loading. The data will come out of the PK-232 so when you  
are looking at data, you must be connected to the PK-232 at 9.6kbs.

>My FT-736R has a fixed level digital output so I cannot "increase  
>the audio until ..." as instructed. I tried to find AIO pin 26  
>but have no idea where that is. Am I blind to the obvious?

There is now a test point TP1 which connects to AIO pin 26.

>I cannot see where I can force the DSP-93 to transmit to set the  
>TX output level. I want to run all modes, but it appears I need  
>different input and output levels (R214/215) for AFSK, PSK and  
>FSK. Do I need to do assembly programming to set this or am I  
>missing something in the documentation on how to set this with  
>software commands? I plan to use port 2 for HF so all VHF/UHF  
>modes need to be set with R214/215.

Yes, if you require different gain (software controllable) settings  
on different modems so you can keep R215 constant, you will need  
to change the gain in the software and re-assemble. For the FSK modems  
(for which you do not have source) I am today distributing the hack  
to the .OBJ files to change the gain.

>I am surprised there is no clock connection between the TNC and  
>DSP-93. That is needed for my TAPR PSK and G3RUH FSK modems.

The clock recovery circuits in the TNC do just fine on their own.

>The DSP documentation has been good up until now. Now I feel  
>adrift and I seem to get more confused the more I try to  
>understand how to set up the DSP-93 to get on the air.

You are correct - the operations part of the documentation is the  
weakest. PLEASE feel free to write up something on getting your  
gear operational. It will help us all. If necessary, I'll help edit it.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : K0-23, K0-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 83. Opportunity! Help write an Operations Guide

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 13 Feb 1995 17:42:16 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab65958b00021004129e@[204.96.0.70]>  
Rendered body type: text/plain

Here is a pro forma outline for an Operations Guide. Anyone who can can  
contribute to writing a draft for a section or two, please contact me  
immediately (First come, first served). This outline is NOT frozen, if you  
have suggested additions of changes, PLEASE let me know.

We need to have a rough draft by March 15 so it's time to start NOW!

We will do final editing. We need just the information. Help out!

The DSP-93 is a cooperative project. It will be as good as we make it!

-----  
Operations Guide for DSP-93  
-----

Introduction and Overview

How to load software  
DOS - DSPLOAD  
Windows - D93WE  
Macintosh - DSP-93Control

Which modem to use for what

How to connect the DSP-93 to your TNC  
TAPR clone  
other?

How to connect the DSP-93 to your radio  
Icom - 9600 bps  
Icom - other  
Kenwood - 9600 bps  
Kenwood - other  
Yaesu - 9600 bps  
Yaesu - other  
Other - other (my favorite topic)

[Note: the topic above should concentrate on connecting the DSP-93 to the  
radio. There is a file on the distribution diskettes (9600MODS.ZIP) which  
covers many radio modifications.]

Specific instructions on each modem, filter, etc.  
APT.DOC

CW\_93.DOC  
FSK.DOC  
HF\_93.DOC  
PKT.DOC  
PSK.DOC  
PSK\_93T.DOC  
TPRS.DOC

[Note: What is needed is an expansion/correction of these files on the distribution diskettes.]

Specific instructions on test software

LOADTEST.DOC  
MEASGAIN.DOC  
MON\_TST.DOC  
SPEEDTST.DOC  
TESTXXXX.DOC

[Note: What is needed is an expansion/correction of these files on the distribution diskettes.]

Programming information

How to assemble a file using TASM  
How to use the .INC files (INC.DOC)  
D93WE.DOC  
DSP-93Control

Theory of operations of DSP-93

MONITOR.DOC  
MONMEM.DOC  
MEM-93.DOC

Anything else that you think is useful!

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 84. Ideas for programming

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 13 Feb 1995 17:42:20 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab659b57010210046f6e@[204.96.0.70]>  
Rendered body type: text/plain

If you are looking for a project to get your feet (and perhaps up to your neck) wet in DSP programming, here are some ideas that should not be too hard (assuming some background in programming).

Add a reset command (typing an 'r' resets the DSP-93) to the modems that do not have it (Hint: look at PKT.ASM)

Add conditional assembly to the PSK modems to add gain and radio port specification (Hint: look at PKT.ASM, also add the standard variables defined in the .INC files)

Combine the various PSK modems where possible using conditional assembly to reduce the number of source files.

Add support to the PSK modems to suport Yaesu radios.

Free support is available - 30 day money back guarantee.

Be the next Bill Gates - write software.

Ron W5RKN

also:  
w5rkn@amsat.org

## 85. info sources

From: wtb@partyline.org  
Date: Mon, 13 Feb 95 22:34:37  
To: dsp-93@tapr.org  
Message-ID: <9502132234.0VPSX00@partyline.org>  
Rendered body type: text/plain

Does anyone have current phone numbers for the Motorola Freeware BBS and the AMRAD BBS?? The Motorola BBS is the source for SMALL11.ARC "C" compiler but the number in the DSP DOC files is not current. The AMRAD BBS is supposed to be a source for some DSP application programs which were written for IBM XT clones. ????

Rons outline for the new operations manual looks great. Unfortunately I do not have the ability to contribute yet; certainly agree with the questions. Bill NOLIK wtb@partyline.org

---

## 86. Cable Errors found

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 14 Feb 1995 06:51:11 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6651a7000210045a68@[204.96.0.40]>  
Rendered body type: text/plain

Via KO-23:

To: w5rkn  
From: W6SHP  
Time: 002500 UTC  
Date: 14FEB95  
Title: cable errors found  
-----

Hello Ron,

A day away from a problem often helps. After I uploaded my message to you this morning I decided to check out my cabling one more time. Guess what? I screwed up on the cabling! I guess I was so sure I did it right yesterday I never saw the error in my double check of my cables.

I use a PK-232MBX that is connected to two rigs and three external modems. In order to quickly change between these three modems, or to the internal PK-232 modem I have a complex cable and switching system to interconnects my digital systems. All these cables run behind my desk, intermingled with the cabling for my three transceivers, their accessories, amplifiers, rotors, Trakbox and computer.

I recalled a message from another builder to really be careful with the cabling. So this morning I pulled all the modems, TNC and DSP-93 cables in front of my gear so it all was on my desk to easily trace. Argggggg! One of my analog cables ended in a digital connection! Now I realize where that "extra" audio plug I had left came from. I never made that line! Instead I took a PK-232's digital line and fed it to my DSP-93 audio in. Further examination of my interconnection cables for my PSK/G3RUH PTT line disclosed an error I made long ago when I drew my cables' interconnection schematic's PTT line. That is probably why my TNC could not make the DSP transmit.

Guess I was overconfident because everything worked right for me every step of the way until now. Oh well, guess that is how we learn.

So the next block of free time I have I'll have to trace out this cable and correct my schematic, and break out the soldering iron, rebuild the cable and try again. I am still confused on the other points I mentioned, so any help would be appreciated.

I am looking forward to having the TNC inside the DSP-93 so I can get rid of my PK-232. I will then be able to simplify the cabling nightmare I have created over the years. Even other hams are amazed when they see my jungle of cables behind my desk.

73 Howard W6SHP  
@ KO-23 & AO-16

Ron W5RKN

also:

## 87. Message from DL1CR

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 14 Feb 1995 06:51:16 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6653e301021004e09c@[204.96.0.40]>  
Rendered body type: text/plain

Via KO-23;

To : DL1CR  
From: W5RKN  
Time: 122947UTC  
Date: 14 Feb 1995  
-----

Hello Kurt,

>>Have you used other 9600 modems so you know that your radio, etc. works  
>>with 9600? If you have a scope, what p-p voltage do you see at TP1?  
>>It should be about 1V p-p, more is not needed.  
>  
>Thanks much for the prompt response, OM. The voltage at TP1 is well over  
>1V p-p and in the meanwhile I did get a 9600Bd display on the screen.  
>How this has come about is not quite clear yet. Just by hitting the <ENTER>  
>key rather casually the screen turned very busy.

Having more than 1V p-p at TP1 causes clipping to occur in the initial  
D/A conversion in the AIO chip. I would turn down the gain pot to get  
less than or equal to 1V p-p at TP1.

>I still have to do all the new of cables so at present I am only running tests  
>with various off-the-air signals using the WINDOWS terminal program for  
>viewing.

>  
>Please advise whether the following is correct or still needs attention:  
>

>1200Bd FM with ~2V p-p at TP1 adjustable with R215  
>Active DSP-93 LEDs: Pwr, 7, 6 faintly, 5 w/o signal, 3 w/signal  
> " TNC2C LEDs: Pwr, DCD w/o signal, DCD off w/signal  
>  
>9600Bd FM with ~2V p-p at TP1 rather noisy w/o signal, clean w/signal  
>Active DSP-93 LEDs: Pwr, 7, 5 permanently, none else  
> " TNC2C LEDs: Pwr, DCD permanently

Looks OK except too much signal at TP1.

>Are you using the same FSKP1.OBJ as TAPR has distributed with the kits or an  
>improved one?

I use the FSKP1 in the ROM.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : KO-23, KO-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

## 88. Message from VE3EGO

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 14 Feb 1995 06:51:21 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab66574b02021004adbd@[204.96.0.40]>  
Rendered body type: text/plain

Via KO-23:

To : VE3EGO  
From: W5RKN  
Time: 123826UTC

Date: 14 Feb 1995

-----

Hello Syd,

>>You are coming up with good questions for your operations "manual".

>>I'll help with the answers.

>

>Thanks. I just may be the right guy to write the manual. Writing it is easy,

>My objective would be to write the manual in such a manner so that any

> reasonably qualified ham with no programming experience will be able to

>assemble and run the DSP93 with little, if any, outside help. The success

>of the project can be measured by the type of questions and the satisfaction

>of the user.

>

>>You re-assemble them (see examples in ASmall.BAT) and then load the modem

>>from the disk, rather than ROM.

I wrote a draft outline for an operations manual yesterday. I'll upload a copy for you to look at.

>Now the truth can be told.....

>I had written a note to you in utter frustration but decided not to send

>it until

>after I had "slept" on it for a while. Here is the gist of it.

>

>"I have a problem. I haven't the foggiest idea how to assemble a program. Never

>assembled any software before. I attempted to assemble the 9600 baud Full

>Duplex

>Satellite Modem. I ran D93WE.EXE and under DEVELOPMENT I chose Assemble

>Program and that went into never never land. I then used HELP and under

>ASSEMBLE

>it said to SET PROGRAM. Using SET PROGRAM I opened FSKP1.OBJ and nothing

>happened. I looked for asm.fsk.asm to try to add the radio port and gain

>parameters

> and failed. Guess I do not understand what you are saying. I need help !!"

>

>After sleeping on the problem I recalled building a computer with an RCA

>1802 which

>had a monitor and recalled that I had somehow changed parameters on that one.

>So I went to work and found out how to run the programs. Boy I felt good

>when it

>worked.

>

>I would appreciate if you would take me by the hand through the necessary steps

>so that I can also assemble a program.

Be sure to read the D93WE Help files. There is a lot of stuff there.

It's hard to get everything together the first time. TAPR decided not to distribute the source for FSK....

Start with something like TESTLEDS for your first assembly.

First SET PROGRAM NAME.

Second ASM PARAMETERS (the default is OK for TESTLEDS)

Then ASSEMBLE PROGRAM.

Finally DOWNLOAD ...

Before this you must have edited the D93WE.INI file to point to the TASM program, your editor, etc. See the Help file.

I know there is a lot there but, hang in there. There is a safety net.

>Thanks for the "DCD locked high explanation.

>

>It will not take me long to write the manual Ron once I understand what I

>am doing.

>

>Would you mind finding out from TAPR whether the docs that will be shipped out

>with the second shipment of DSP93's will be the same as the docs shipped with

>the first shipment. I want to make sure that the second shipment builders will

>use the same docs that I am using ie. schematic and assembly

>instructions.Thanks.

They will be about the same with errors corrected.

>This is sure an interesting experience.

I hope you are having fun. I did, and came out the other end.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : K0-23, K0-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 89. Re: [DSP-93:368] info sources

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 14 Feb 1995 07:07:49 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab665ac3030210047e63@[204.96.0.103]>  
Rendered body type: text/plain

Motorola DSP BBS 512-891-3771  
Motorola MCU BBS 512-891-3733

Ron

>Does anyone have current phone numbers for the Motorola Freeware BBS  
>and the AMRAD BBS?? The Motorola BBS is the source for SMALL11.ARC  
>"C" compiler but the number in the DSP DOC files is not current. The  
>AMRAD BBS is supposed to be a source for some DSP application programs  
>which were written for IBM XT clones. ????  
>Rons outline for the new operations manual looks great. Unfortunately  
>I do not have the ability to contribute yet; certainly agree with the  
>questions. Bill NOLIK wtb@partyline.org

Thanks,

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 90. Memory and B0 use

From: deh6@po.CWRU.Edu (Donald E. Haselwood)  
Date: Tue, 14 Feb 1995 09:38:36 -0500  
To: dsp-93@tapr.org  
Message-ID: <199502141438.JAA25128@kanga.INS.CWRU.Edu>  
Rendered body type: text/plain

>Date: Tue Feb 7 13:47:30 1995  
>From: bstrick@tenet.edu (Bob Stricklin)  
>Subject: [DSP-93:328] Re: Memory config  
>To: dsp-93@tapr.org  
>Reply-To: dsp-93@tapr.org

>According to Donald E. Haselwood:  
>>  
>> Bill, NOLIK  
>>

>With regards to your comments on B0, what do you think about a >paragraph or  
>so on B0 and just let the programmer put it in the state he >wants. Your work  
>and posting has shown that it can be used to move the sine >table. This may  
>be a good example to include.

Here are two programs. The first, SIN\_LDR.ASM moves the sine table from ROM to program memory. The second is more subroutine-like and a) moves a block of code from one location in program memory to another location, and b) moves any block of ROM to program memory, the sine table used as an example. These programs demonstrate the switching of memory during execution of a program.

-----  
; SIN\_LDR.ASM - Load Sine table from ROM  
;  
#INCLUDE "MONITOR.INC"  
#INCLUDE "REGS.INC"  
;

```

SIN_SRC .EQU 7751h ; Source location in ROM for sine table
SIN_DST .EQU 7000h ; Destination location in RAM (prog)
SIN_SIZ .EQU 086Fh ; Size of sine table.
;
.MSFIRST
; ***** Beginning of program in B0 *****
;
.ORG 02C0h ; B0 configured as data memory
; The following program loads into B0 configured as data memory.
; When the loader executes the jump to 1008 and resets the XF bit,
; this memory block appears at FF00h (prog).

 SXF ; Set XF = 1, thus setting processor to slow
 ; speed, and substituting ROM for program.

; Move sine table from ROM into high end of (prog-fast) RAM, lower 32K.
; AR2 was loaded by calling program with address in SRAM where sine
; table is to be stored.
 LARP AR2
 RPTK 0FFh ; 256 words ; Block moves are used to make the
 BLKP SIN_SRC + 0000h, *+ ; transfer. Since block moves are
 RPTK 0FFh ; 256 words ; limited to 256 words, the table
 BLKP SIN_SRC + 0100h, *+ ; table must be moved by a series
 RPTK 0FFh ; 256 words ; of instructions.
 BLKP SIN_SRC + 0200h, *+
 RPTK 0FFh ; 256 words ; Note that all of these instructions
 BLKP SIN_SRC + 0300h, *+ ; will operate OK when located at
 RPTK 0FFh ; 256 words ; any address. Therefore, the
 BLKP SIN_SRC + 0400h, *+ ; assembly at 02C0 and execution at
 RPTK 0FFh ; 256 words ; FFC0 will not cause any problems.
 BLKP SIN_SRC + 0500h, *+ ; Branch instructions use absolute
 RPTK 0FFh ; 256 words ; address so they need to be setup
 BLKP SIN_SRC + 0600h, *+ ; so the correct execution address
 RPTK 0FFh ; 256 words ; gets assembled (therefore they were
 BLKP SIN_SRC + 0700h, *+ ; nor used).
 RPTK SIN_SIZ - 800h ; Remainder
 BLKP SIN_SRC + 0800h, *+

; Set processor back to fast speed, with SRAM active, ROM switched out.
 RXF
 RET
; ***** End of program in B0 *****

; Normal user memory
.ORG 1000h
 B GO
 B GO
 B GO
 B GO
; Begin operation here after loading this program.
GO DINT ; Just In Case

 LRLK AR2, SIN_DST ; Beginning of (prog-fast) memory for sine tbl

 CALL START_B0 ; Go to B0 (prog) to move sine table to RAM

; Return from B0 (prog)
 B RESET ; Jump to monitor--Type "G" to go to fast mode,
 ; then examine memory, for example:
 ; Dump SRAM program (D P 7000 7020) and
 ; compare it to ROM (R D P 7751 7771).

 .ORG 0FFC0h ; Start of program in B0 when B0 is
 ; configured as program memory.
START_B0 .EQU *

 .END ; end of program

:18058000CE0D558ACBFFFC07751CBFFFC07851CBFFFC07951CBFF52
:18059800FCA07A51CBFFFC07B51CBFFFC07C51CBFFFC07D51CBFF81
:0E05B000FCA07E51CB6FFCA07F51CE0CCE265E
:18200000FF801008FF801008FF801008FF801008CE01D2007000FE80DD
:06201800FFC0FF8004146C
:00000001FF

; MON_EXT.ASM: (MOnitor EXTensions) --
; Move PROGRAM TO PROGRAM; and move ROM TO PROGRAM
; PRG_PRG & ROM_PRG are call entry points.

```



```

;
#include "REGS.INC"
;
; .MSFIRST ; Be sure bytes go in right place in words
;
B0_OFF .EQU 0C0h ; Offset of code within B0
B0_PRG .EQU 0FF00h ; Location of B0 (prog)
; .ORG 0200h + B0_OFF ; Place to put code in B0 (data)
B0_ORG .EQU * ; Location of code in B0 (data)

; *****
; Move block of program within U104,5,6,7.
; CALL PRG_PRG with the following Aux registers loaded:
; Entry:
; AR6 = Points to last word of source data.
; AR5 = Points to last word of destination.
; AR4 = Size of block (minus 1) to move
; Exit:
; AR6 = End of block minus 1.
; AR5 = End of block minus 1.
; AR4 = Zero.

PRG_COD .EQU *
SXF ; Set U104,5,6,7 to data mode.
PRG1 LARP AR6 ; Point to source, and
LAR AR3, *- ; get source word.
LARP AR5 ; Point to destination address and
SAR AR3, *- ; store word.
LARP AR4 ; Point to counter and
BANZ PRG1 - B0_ORG + B0_OFF + B0_PRG ; decrement/branch not zero.
RXF ; Return U104,5,6,7 to program mode.
RET

; *****
; Move ROM to U104,5,6,7.
;
; Entry:
; CALL PRG_PRG_X (Located in U104,5,6,7) which calls
; ROM_PRG located here).
; AR6 = Beginning (low) of source data in ROM.
; AR5 = Beginning of destination in U104,5,6,7.
; AR4 = Size of block (minus 1) to move.
; Exit:
; AR6 = No change.
; AR5 = Incremented by one.
; AR4 = No change.
ROM_COD .EQU *
SXF ; Set U104,5,6,7 to data, ROM to prog mode.
LARP AR5
BLKP 0000h, *+ ; Move source (prog) to temp (data)
; An address gets pushed into where 0000h sits before
; the above instruction gets executed.
RXF ; Switch U104,5,6,7 from data to prog
RET

;
;
; The following computes the address to used to call the routines,
; once the above has been loaded and execution begins at 1008h.
ROM_PRG .EQU ROM_COD - B0_ORG + B0_OFF + B0_PRG ; Entry add to routine.
PRG_PRG .EQU PRG_COD - B0_ORG + B0_OFF + B0_PRG ; Entry add to routine.
;
; .END

; MOV_SIN.ASM - Test PRG_PRG move and ROM_PRG move.
;
#include "MONITOR.INC"
#include "REGS.INC" ; ***** Note this include
;
#include "MON_EXT.ASM"
;
; .ORG 1000h
B GO ; TINT
B GO ; RINT
B GO ; XINT
B GO ; TRAP
B GO ; JIC (Just in Case)
GO_AGN RET
GO DINT ; JIC

```

```

; Program to program move
; Move monitor in program 0400 - 0FFFh to 6400 - 6FFFh.
 LRLK AR6, 0FFFh ; Move monitor in 0400 to 6400h.
 LRLK AR5, 6FFFh ;
 LRLK AR4, 0C00h - 1 ; Size of table minus 1.
 CALL PRG_PRG ; Go move it.
; ROM to Program move
 LRLK AR6, 07751h ; Beginning of sine table in ROM.
 LRLK AR5, 07000h ; SRAM prog location for it.
 LRLK AR4, 086Fh - 1 ; Size of table minus 1.
 CALL PRG_PRG_X
 B RESET
; *****
; The following subroutine must reside in SRAM. It calls
; PRG_PRG that must reside in B0 (prog). PRG_PRG switches
; the XF, thus accessing ROM. PRG_PRG_X sets the destination
; address into the instruction used in the B0 routine.
;
PRG_PRG_X .EQU *
 LRLK AR3, ROM_COD + 3
 CNFD ; Set B0 to DATA
 LARP AR3
 SAR AR6, * ; Store the move address
 CNFP ; Set B0 to PROG
 CALL ROM_PRG ; Go make the move
 LARP AR6 ; Increment the destination pointer
 ADRK 1
 LARP AR4
 BANZ PRG_PRG_X
 RET

 .END

:18058000CE0D558E3390558D7390558CFB90FFC1CE0CCE26CE0D558D46
:08059800FCA00000CE0CCE26F1
:18200000FF80100BFF80100BFF80100BFF80100BCE26CE0103
:18201800D6000FFFD5006FFFD4000BFFE80FFC0D6007751D50070008B
:18203000D400086EFE80101EFF800414D30002CDCE04558B7680CE05EE
:10204800FE80FFCA558E7E01558CFB90101ECE2651
:000000001FF

73's
Don, K4JPJ

```

## 91. Programming AIO stuff

From: deh6@po.CWRU.Edu (Donald E. Haselwood)  
 Date: Tue, 14 Feb 1995 09:39:27 -0500  
 To: dsp-93@tapr.org  
 Message-ID: <199502141439.JAA25561@kanga.INS.CWRU.Edu>  
 Rendered body type: text/plain

Ron, W5KRN

I'm beginning to dive into learning about the AIO. What does the following code from TESTBUZZ.ASM do?

```

ZAC
LAC DRR
ANDK 0FFFCb ; mask out AIO control bits
SACL DXR
CALL WAIT8
LALK 0000h
SACL DXR
CALL WAIT8 ; only one wait period
LALK 0FFF0h ; next step is only 1 quantize lower
SACL DXR
CALL WAIT8 ; so we will split the step for display

```

Here is how I would "read it":

```

ZAC ; Not necessary (?)
LAC DRR ; Get A/D reading of what we have
 ; putting out.
ANDK 0FFFCb ; Get rid of the control reg bits (D0,D1)
SACL DXR ; Put the A/D back out to the D/A, and
CALL WAIT8 ; wait for 1/2 the step period.
LALK 0000h ; Set the D/A to zero volts,
SACL DXR ; ...
CALL WAIT8 ; and wait for 1/2 of a step period.

```

```
LALK 0FFF0h ; Set D/A FOUR quantized steps lower, than
SACL DXR ; zero volts. (*)
```

(\*) The left 14 bits comprise the A/D & D/A words, hence 0FFFCh is one step lower than 0000h. (?)

If this interpretation is correct, why read the A/D register? Why not just put out a zero, two WAIT8s, then a negative step, etc.? Am I missing something?

73's  
Don, K4JPJ

---

## 92. Re: [DSP-93:374] Programming AIO stuff

```
From: rparsons@bga.com (Ronald G. Parsons)
Date: Tue, 14 Feb 1995 10:01:51 -0600
To: dsp-93@tapr.org
Message-ID: <ab668121040210048185@[204.96.0.103]>
Rendered body type: text/plain
```

Don,

I can only speculate here - perhaps some of the original authors will tell us what they were thinking at the time.

As far as the ZAC before LAC, you are right, the ZAC is unnecessary.

It appears that the (near) zero value step is preceeded by a half-step value of whatever was on the current input (Radio port 1, gain 16), followed by a half-step of zero, followed by a half-step of small negative value. Then on to the full-steps of negative values.

Why was this done? Why not???? Or perhaps, to make us learn by understanding.

Ron

```
>Ron, W5KRN
>
>I'm beginning to dive into learning about the AIO. What does the
>following code from TESTBUZZ.ASM do?
>
> ZAC
> LAC DRR
> ANDK 0FFFCh ; mask out AIO control bits
> SACL DXR
> CALL WAIT8
> LALK 0000h
> SACL DXR
> CALL WAIT8 ; only one wait period
> LALK 0FFF0h ; next step is only 1 quantize lower
> SACL DXR
> CALL WAIT8 ; so we will split the step for display
>
>Here is how I would "read it":
>
> ZAC ; Not necessary (?)
> LAC DRR ; Get A/D reading of what we have
> ; putting out.
> ANDK 0FFFCh ; Get rid of the control reg bits (D0,D1)
> SACL DXR ; Put the A/D back out to the D/A, and
> CALL WAIT8 ; wait for 1/2 the step period.
> LALK 0000h ; Set the D/A to zero volts,
> SACL DXR ; ...
> CALL WAIT8 ; and wait for 1/2 of a step period.
> LALK 0FFF0h ; Set D/A FOUR quantized steps lower, than
> SACL DXR ; zero volts. (*)
>
>(*) The left 14 bits comprise the A/D & D/A words, hence 0FFFCh
>is one step lower than 0000h. (?)
>
>If this interpretation is correct, why read the A/D register?
>Why not just put out a zero, two WAIT8s, then a negative step,
>etc.? Am I missing something?
>
>
>73's
>Don, K4JPJ
```

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 93. TESTING / INTERFACING NOTES

From: crohrer@VNET.IBM.COM  
Date: Tue, 14 Feb 95 11:09:41 CST  
To: dsp-93@TAPR.ORG  
Message-ID: <m0reQmt-0000t1C@dptspd.sat.datapoint.com>  
Rendered body type: text/plain

A few FYI points on interfacing the DSP-93 to your radio.

- 1 The sand colored mini din cable supplied use color coded wires that correspond to resistor color values. ie: brown = 1, red = 2. So the red wire is pin 2 on the connector, this may be helpful in quick trouble shooting cases.
- 2 For wiring and labeling discrepancies, use ONLY the information contained in the build document, and these INTERNET updates.
- 3 Don't have a 'scope, but do have a voltmeter and need to measure peak to peak voltages? Use math to convert peak to peak to the desired meter (RMS) reading. Divide the peak to peak value by 2 and multiply by .707. So 1V PP then should read 353.5 milli volts on your meter. Remember we are not dealing in perfect sine waves here so be conservative.
- 4 A GREAT tool for testing PSK receive operation is the PSK TEST AUDIO CASSETTE. This was available from AMSAT and was invaluable for those of us that built the TAPR PSK modem back in 1990. This tape also has AO-13 300 baud telemetry on the 'flip' side. Hopefully the tape can still be made available. Consider using other homemade tapes to aid in testing.
- 5 Use an A/B switch to attach your computer COMM port to either the DSP-93 or your TNC as required.
- 6 A good initial test scenario to ensure your audio-in cable is good and that ROM software is good: Start WINDOWS and run DSP93WE, click on INSTRUMENTS and then OSCILLOSCOPE. Click on START and run the audio from a cassette into RADIO PORT 1. Click on sweep speed etc. and you can look at your audio.
- 7 Copy all your \*.OBJ files into the WINDOWS subdirectory so that they are available to DOWNLOAD from the WINDOWS DSP93WE screen.
- 8 Can not stress the importance enough of:
  - 1) SET YOUR TNC TO THE CORRECT RADIO BAUD RATE. IE:1200 FOR PSK
  - 2) SET YOUR TNC TO FULLDUP ON
- 9 Wire the TNC - DSP93 header cable EXACTLY as shown on page 32 of the build document. Note: if you are a PK232 user and have installed the TAPR DISCONNECT header, simply plug into it from your DSP93 and it will work.
- 10 Remember in 1200 packet mode and 1200 baud PSK mode your audio in is adjustable from your radio audio volume control (in most cases). Set the volume so that LED 6 on the DSP93 is about 60 to 70% of the brightness of the LEDs 5 and 7. For 9600 baud operations your audio from the radio discriminator is not adjustable and therefore must be set to the correct level via R215 (Port 1).
- 11 The DSP93 creates tremendous noise around 145.01 on the 2M band. Don't expect initial on-air testing success without considering this. By the way comments regarding shielding, grounding, toroids, etc that minimize this effect are most welcome.
- 12 Besides the data in the supplied DOC files, you should also look at the \*.ASM files as the programmers supply valuable comments at the front of their code.
- 13 If you are using the KCT / TUNER, TRACKBOX or other offerings to drive your radio CAT for doppler frequency then you don't have to worry about the DSP-93 up down frequency control issues and making use of the 'correct' OBJ program for your radio. So for example if you are testing PSK programs, pick whichever one works best for you and disregard frequency control / radio specific qualifiers.

14 Note that the DSP93 will not provide data to your TNC initially as quick as a hardware modem will. So give it a bit of time to get started when you begin testing.

15 Avoid probing pins on the IC's. Use a Test Point (TP) if at all possible. A slip of the probe and possible damage will only compound start up confusion.

Hopefully this document helps, as additional thoughts occur I will add to it. Your comments are welcome. Best 73s Clem -NR3U  
Internet CROHRER@VNET.IBM.COM

---

## 94. (no subject)

From: euitiz@redes2.unizar.es  
Date: Tue, 14 Feb 95 18:27:54 -0500  
To: dsp-93@tapr.org  
Message-ID: <9502142327.AA0039@galahad.watson.ibm.com>  
Rendered body type: text/plain

Please, could anyone tell me how to unsubscribe from this list?

Thanks.

Charles

---

## 95. Re: [DSP-93:377]

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 14 Feb 1995 12:10:14 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199502141810.MAA02348@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

So that everyone knows.

Simple,

1. send e-mail to 'listserv@tapr.org'
2. in the message body say  
unsubscribe dsp-93

That should do it.

Greg

According to euitiz@redes2.unizar.es:  
>  
> Please, could anyone tell me how to unsubscribe from this list?  
>  
> Thanks.  
>  
> Charles  
>  
>  
>

---

## 96. Re: [DSP-93:376] TESTING / INTERFACING NOTES

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Tue, 14 Feb 1995 13:30:55 -0500  
To: dsp-93@tapr.org  
Message-ID: <9502141825.AA11149@camel.campbell.edu>  
Rendered body type: text/plain

\*\*\*\* Bravo Clem \*\*\*\*\*

Excellent job on the summary! Glad to see you helping with this very critical component of the project!!!

Leading by example!

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buires Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

## 97. Re: [DSP-93:376] TESTING / INTERFACING NOTES

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 14 Feb 1995 12:56:18 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab66a2c205021004688d@[204.96.0.103]>  
Rendered body type: text/plain

Clem,

Nice list. I have a comment on a couple of the items. Ron W5RKN

- > A few FYI points on interfacing the DSP-93 to your radio.
- >
- > 1 The sand colored mini din cable supplied use color coded wires
- > that correspond to resistor color values. ie: brown = 1, red = 2.
- > So the red wire is pin 2 on the connector, this may be helpful in
- > quick trouble shooting cases.

This may be true for the cables in your hand but do not depend on this. Not all cables follow this color coding. Measure to be sure.

- > 7 Copy all your \*.OBJ files into the WINDOWS subdirectory so that they
- > are available to DOWNLOAD from the WINDOWS DSP93WE screen.

A better place is in the directory where d93we.exe resides. That appears to be the default directory for downloading.

- > 8 Can not stress the importance enough of:
- > 1) SET YOUR TNC TO THE CORRECT RADIO BAUD RATE. IE:1200 FOR PSK
- > 2) SET YOUR TNC TO FULLDUP ON

FULLDUP ON is not always appropriate -- for example, terrestrial packet.

- > 11 The DSP93 creates tremendous noise around 145.01 on the 2M band. Don't
- > expect initial on-air testing success without considering this. By
- > the way comments regarding shielding, grounding, toroids, etc that
- > minimize this effect are most welcome.

I've heard others say this but the signal at 145.01 at my site is very weak, even with the case off. I think this might depend on how the radiation gets into your radio.

- > 13 If you are using the KCT / TUNER, TRACKBOX or other offerings to
- > drive your radio CAT for doppler frequency then you don't have to
- > worry about the DSP-93 up down frequency control issues and making
- > use of the 'correct' OBJ program for your radio. So for example if
- > you are testing PSK programs, pick whichever one works best for
- > you and disregard frequency control / radio specific qualifiers.

Most users do not get good results without the modem (DSP-93 or other) controlling the receive frequency on PSK birds. But, whatever works...

- > 14 Note that the DSP93 will not provide data to your TNC initially as
- > quick as a hardware modem will. So give it a bit of time to get
- > started when you begin testing.

What are you referring to here? I get immediate data as soon as the modem starts running. And if I load the modem from ROM, it's really fast.

- > Hopefully this document helps, as additional thoughts occur I will
- > add to it. Your comments are welcome. Best 73s Clem -NR3U
- > Internet CROHRER@VNET.IBM.COM

Great, keep 'em coming.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 98. Re: [DSP-93:376] TESTING / INTERFACING NOTES

From: ssalek@h-e.com (Stan Salek)  
Date: Tue, 14 Feb 1995 09:30:31 -0800  
To: dsp-93@tapr.org  
Message-ID: <199502142237.0AA28014@netcomsv.netcom.com>  
Rendered body type: text/plain

Hi Clem--these are some great notes; I especially like this one:

```
> 4 A GREAT tool for testing PSK receive operation is the PSK TEST
> AUDIO CASSETTE. This was available from AMSAT and was invaluable
> for those of us that built the TAPR PSK modem back in 1990. This
> tape also has AO-13 300 baud telemetry on the 'flip' side. Hopefully
> the tape can still be made available. Consider using other homemade
> tapes to aid in testing.
```

A tape like this would help me (a satellite novice) out a great deal.

73, Stan

ssalek@h-e.com

---

## 99. Re: [DSP-93:381] Re: TESTING / INTERFACING NOTES

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 14 Feb 1995 18:35:30 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199502150035.SAA095339@Joyce-Perkins.tenet.edu>  
Rendered body type: text/plain

I purchased one of those long ago -- I am usre AMSAT would love to sale those again :-)

Greg

According to Stan Salek:

```
>
> Hi Clem--these are some great notes; I especially like this one:
>
> > 4 A GREAT tool for testing PSK receive operation is the PSK TEST
> > AUDIO CASSETTE. This was available from AMSAT and was invaluable
> > for those of us that built the TAPR PSK modem back in 1990. This
> > tape also has AO-13 300 baud telemetry on the 'flip' side. Hopefully
> > the tape can still be made available. Consider using other homemade
> > tapes to aid in testing.
>
> A tape like this would help me (a satellite novice) out a great deal.
>
> 73, Stan
>
> ssalek@h-e.com
>
>
```

---

## 100. Messsage from VE3EGO

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 15 Feb 1995 07:07:42 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab67accc06021004e911@[204.96.0.103]>  
Rendered body type: text/plain

Via KO-23:

To : VE3EGO  
From: W5RKN  
Time: 125856UTC  
Date: 15 Feb 1995  
-----  
Hello Syd,

```
>Opened D93WE.EXE, under DEVELOPMENT selected Program Name.
>The file TESTLEDS.ASM is selected
>In ASM Parameters Default selected
>Then Downloaded. Obtained error message
> "Unable to open file d:\dsp93\asm\testleds.obj"
>
>I thought that since TESTLEDS had already been assembled I would change
>SET PROGRAM NAME to SYDLEDS.ASM. Of course that wouldn't work also.
```

If you kept the same directory structure as was on the distribution diskettes, then the .ASM files are in d:\dsp93\asm\ and the .OBJ files are in the d:\dsp93\obj\. If you had assembled testleds, the .OBJ file would have been placed in the same directory as the .ASM file. Then it would have worked.

There are two "download" menus. The one under development assumes the .OBJ file will be in the same directory as the .ASM file. The other

in the download menu will let you choose the directory.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : K0-23, K0-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 101. Build update correction

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 15 Feb 1995 11:24:59 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab67e88809021004f249@[204.96.0.103]>  
Rendered body type: text/plain

VE3EGO pointed out an error in the "error in the port initialization code" writeup.

I said:

It turns out that PTT Port 1 ALWAYS initializes high.  
PTT Port 2 and both UP/DOWN lines initialize "backwards", i.e.,  
when you strap the their initialization lines (DSP-93 TNC pins 7, 16, 18)  
low, the corresponding port initializes high, and vice versa.

The names of the lines are correct, I should have said  
"(DSP-93 TNC pins 7, 14, 16)".

Sorry,

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 102. Re: [DSP-93:365] Message from W6SHP

From: Carol Byers <crlbyers@garlic.com>  
Date: Wed, 15 Feb 1995 13:38:44 -0800 (PST)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950215133613.10581A-100000@garlic.com>  
Rendered body type: text/plain

Hi Howard,

Am not as far along as you, but will be attempting to interface my DSP-93  
with the PK-232 also. Keep us posted as you findout what's going  
on...Also use a 736R.

Carol, W9HGI

On Mon, 13 Feb 1995, Ronald G. Parsons wrote:

> Via K0-23:  
>  
>  
> To : W6SHP  
> From: W5RKN  
> Time: 195529UTC  
> Date: 13 Feb 1995  
> -----  
> Hello Howard,  
>  
> >I have just completed my DSP-93. It has passed all the tests and  
> >runs the \*.obj test programs and the three test instrument  
> >programs ok. This weekend I tried to get on the air and have  
> >failed 100 percent in every effort. I won't go into everything  
> >that I tried. But nothing works and I cannot figure out the DOC  
> >instructions in many cases. I found the wrong pots are called



```

> >out by some DOC instructions.
>
> Check the Build updates. The error was pointed out there. If you
> can get Internet access, that would be best. If not, the build
> updates are being uploaded here also.
>
> The correct pots are: R213 and R214 are transmit levels.
> R215 and R216 are receive levels.
>
> >Perhaps the easiest solution would be if you could let me know of
> >beta testers who use the PK-232 and FT-736R. The PSK programs
> >are for Kenwood and Icom rigs. Which is to be used for my rig?
>
> Interestingly, there were no beta testers using the FT-736R.
> I'll post this on dsp-93@tapr.org and see if someone has the
> source changes for the FT-736R
>
> >My PK-232 has a max speed of 9600 baud. Could this be a problem?
>
> Not really. The serial port on the DSP-93 is 19.2 kbs but this is used
> for software loading. The data will come out of the PK-232 so when you
> are looking at data, you must be connected to the PK-232 at 9.6kbs.
>
> >My FT-736R has a fixed level digital output so I cannot "increase
> >the audio until ..." as instructed. I tried to find AIO pin 26
> >but have no idea where that is. Am I blind to the obvious?
>
> There is now a test point TP1 which connects to AIO pin 26.
>
> >I cannot see where I can force the DSP-93 to transmit to set the
> >TX output level. I want to run all modes, but it appears I need
> >different input and output levels (R214/215) for AFSK, PSK and
> >FSK. Do I need to do assembly programming to set this or am I
> >missing something in the documentation on how to set this with
> >software commands? I plan to use port 2 for HF so all VHF/UHF
> >modes need to be set with R214/215.
>
> Yes, if you require different gain (software controllable) settings
> on different modems so you can keep R215 constant, you will need
> to change the gain in the software and re-assemble. For the FSK modems
> (for which you do not have source) I am today distributing the hack
> to the .OBJ files to change the gain.
>
> >I am surprised there is no clock connection between the TNC and
> >DSP-93. That is needed for my TAPR PSK and G3RUH FSK modems.
>
> The clock recovery circuits in the TNC do just fine on their own.
>
> >The DSP documentation has been good up until now. Now I feel
> >adrift and I seem to get more confused the more I try to
> >understand how to set up the DSP-93 to get on the air.
>
> You are correct - the operations part of the documentation is the
> weakest. PLEASE feel free to write up something on getting your
> gear operational. It will help us all. If necessary, I'll help edit it.
>
> 73 from Ron - W5RKN
>
> Using the TAPR/AMSAT DSP-93 unit - ask me about it!
>
> -----
> Austin, Texas USA
> Internet : w5rkn@amsat.org
> SAT : KO-23, KO-25
> -----
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>

```

### 103. Re: info

```

From: rparsons@bga.com (Ronald G. Parsons)
Date: Thu, 16 Feb 1995 08:18:28 -0600
To: matem@ipv36.unipv.it (dip. Matematica- Rossella)

```

Cc: dsp-93@tapr.org  
Message-ID: <ab690cf00d021004a58f@[204.96.0.103]>  
Rendered body type: text/plain

>Hi ron step by step we solved the problems...I have fixed the bug about  
>resetting  
>when signal is coming up(cable).After, i had tried to listen some fsk signal  
>with few fortune.I load fskxx.obj led 5,7,8 on and then i pass on a  
>terminal prg  
>NO FRAME on the screen,also changing the gain,The scope visual a 1 volt pep  
>on TP1.ANY SUGGESTION? Tnx in advance  
>FRANCO IN3DYG

Franco,

These messages should be sent to dsp-93@tapr.org. I assume you have joined that list by now. That way all users have a chance to help you and learn from your problems and successes.

What radio are you using? How is the radio connected to the DSP-93?

What do the signals look like on the scope? Do you have another 9600 bps modem that you are successful with?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 104. re:help

From: matem@ipv36.unipv.it (dip. Matematica- Rossella)  
Date: Thu, 16 Feb 1995 17:16:22 +0100  
To: dsp-93@tapr.org  
Message-ID: <9502161616.AA00878@ipv36>  
Rendered body type: text/plain

Hi all,  
about my previous message(nothing reading on screen),I answer to Ron's questionI use a ts790e and a tnc-2(only 9k6)working from many time on satellites.  
The radio signal is coming from varactor and discriminatorof ts790,through the acc.socket were is taked also the PTT and GND (tx and rx directly,without capacitors or resistors).  
The connection between dsp-93 and tnc are the same of page 32 of 33 in the build -doc.On the scope at TP1 without signal i read a noise about 1,5 volt pep.When a signal arrive I see a clear signal(like a eye?)with a 1 volt pep.Using a terminal prg and try to connect a station the system go in t  
Then the ptt work at least! TNX in advance for suggestion  
FRANCO IN3DYG

---

## 105. pk232

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Thu, 16 Feb 1995 12:02:31 -0500  
To: dsp-93@tapr.org  
Message-ID: <9502161658.AA03687@camel.campbell.edu>  
Rendered body type: text/plain

Guys,

I have successfully used my PK232 with the DSP-93 during beta-testing. It does work, and is VERY VERY easy if you have already modified it for one of the other TAPR external modems. (oh, by the way, I am using a Kenwood TS-790A)

I used the DCD state machine upgrade and the disconnect header kit originally to add the TAPR-PSK modem. Next, I added the TAPR-9600 modem, and then placed the the TAPR-PSK modem after it (pk232->tapr-9600->tapr-psk). It worked well with both modems that way.

When it came time to test the DSP-93 with the PK232, I merely unplugged the cable I had going to the disconnect header (from the tapr-9600/tapr-psk) and set them aside. I then plugged in the DSP-93 connector into the pk232 disconnect header kit connector, and viola! It worked like a charm!

So, it is indeed "plug and play" with an existing pk232/tapr-9600 setup. If I can help either of you guys out, let me know!

What I found was that my PK232 (an OLD one with old ROMs, no mailbox

features at all) was a real bear to get in and out of kiss mode using WiSP, so I set it aside.

Before I unhooked it, however, I *\*WAS\** able to demonstrate automatic mode switching between 1200PSK and 9600FSK satellites! (using WiSP and a handful of other little programs to "kiss on/kiss off) with versions of psk\*.obj and fsk\*.obj that use the "R" reset command (thanks to Ron, W5RKN for those :) )

So, have at it guys, it CAN be done! I still think the MFJ-1270C/DSP93 is okay for now....I'm sticking with the 9600 birds!

>Hi Howard,  
>  
>Am not as far along as you, but will be attempting to interface my DSP-93  
>with the PK-232 also. Keep us posted as you findout what's going  
>on...Also use a 736R.  
>  
>Carol, W9HGI  
>

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 106. TAPR.ORG Downtime

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 16 Feb 1995 11:25:44 -0600 (CST)  
To: tapr-bb@tapr.org (TAPR-BB mailing), hfsig@tapr.org (HF SIG mailing),  
netsig@tapr.org (NETSIG mailing), bbssig@tapr.org (BBS SIG mailing),  
fccreg@tapr.org (fcc), tapr-board@tapr.org (TAPR Board),  
pcs@tapr.org (TAPR PCS Project), dsp-93@tapr.org (DSP-93 Build),  
dsp93dev@tapr.org (DSP93 Development), aprssig@Alice-Thurman.tenet.edu,  
tuc52@tapr.org (TUC-52), tnc95@tapr.org (TNC-95)  
Message-ID: <199502161725.LAA03238@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

TAPR.ORG Downtime 2/16/95  
-----

The TAPR.ORG system will be moving locations on Monday morning, February 20th, 1995.

During this move, the system will be unavailable. A second message will be posted when the system is fully operational.

---

## 107. Message from VE3EGO

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 17 Feb 1995 07:12:17 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6a504601021004a882@[204.181.160.1]>  
Rendered body type: text/plain

Via KO-23:

To : VE3EGO  
From: W5RKN  
Time: 130329UTC  
Date: 17 Feb 1995  
-----

Hello Syd,

>I successfully assembled TESTLEDS. Easy when you know how.

>Thanks for your help.

>

>I am interfacing my FT1000D which has a PTT line at 13.5V and is  
>grounded to activate the PTT. The closed circuit current is 1.5 ma.  
>If I connect that line to the DSP93 it will damage the DSP93.  
>Any suggestions as to how I can overcome this problem will be  
>appreciated.

I would replace the 74S05 with a 7406. This has high-voltage (30V) open collector outputs.

I'll cross post this on dsp-93 to make sure but that's what I'd do.  
Perhaps we should use the '06 standard. I'll check.

Good catch!!!

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : K0-23, K0-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 108. Re: [DSP-93:387] re:help

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 17 Feb 1995 16:06:45 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6acd3a0002100403f3@[204.181.160.1]>  
Rendered body type: text/plain

>Hi all,  
>about my previous message(nothing reading on screen),I answer to Ron's  
>questionI use a ts790e and a tnc-2(only 9k6)working from many time on  
>satellites.  
>The radio signal is coming from varactor and discriminatorof ts790,through  
>the acc.socket were is taked also the PTT and GND (tx and rx  
>directly,without  
>capacitors or resistors).  
>The connection between dsp-93 and tnc are the same of page 32 of 33 in the  
>build  
>-doc.On the scope at TP1 without signal i read a noise about 1,5 volt  
>pep.When a  
>signal arrive I see a clear signal(like a eye?)with a 1 volt pep.Using a  
>terminal prg and try to connect a station the system go in t  
>Then the ptt work at least! TNX in advance for suggestion  
>FRANCO IN3DYG

I was hoping that someone would offer a suggestion, but I have seen none.

Perhaps I could get a little more info.

1. What modem (software) are you using?
2. What signal are you listening to?
3. Can you see a signal in the data lines between the DSP-93 and the TNC?
4. What computer/software is connected to the TNC?
5. Are you able to look at the signal using the DSP-93 oscilloscope program?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 109. server switch successful ?

From: ljs@rain.org (L.J.Shepherd)  
Date: Sun, 19 Feb 1995 22:00:00 -0800  
To: dsp-93@tapr.org  
Message-ID: <199502200556.VAA13398@coyote.rain.org>  
Rendered body type: text/plain

Is the new system on-line ? Haven't received any dsp-93 traffic for the last two days or so and am assuming that is due to the planned change in server.  
73, Jim K6OYY

---

## 110. Re: [DSP-93:380] Re: TESTING / INTERFACING NOTES

From: "Jim Lynch" <k4gvo@america.net>  
Date: Sat, 18 Feb 1995 04:25:30 -0500  
To: dsp-93@tapr.org  
Message-ID: <199502180931.JAA09727@america.net>  
Rendered body type: text/plain

```

> Date: Tue, 14 Feb 1995 13:10:50 -0600
> Reply-to: dsp-93@tapr.org
> From: rparsons@bga.com (Ronald G. Parsons)
> To: dsp-93@tapr.org
> Subject: [DSP-93:380] Re: TESTING / INTERFACING NOTES

> Clem,
>
> Nice list. I have a comment on a couple of the items. Ron W5RKN
>
stuff deleted
>
> > 7 Copy all your *.OBJ files into the WINDOWS subdirectory so that they
> > are available to DOWNLOAD from the WINDOWS DSP93WE screen.
>
> A better place is in the directory where d93we.exe resides. That appears to
> be the default directory for downloading.
A better solution might be to include a browse feature in the
program. I haven't figured out how to change the directory so I have
to resort to typing the complete path. Sounds like I'm not the only
one. I'd take a stab at it, but I don't have Borland C++.
>
more stuff deleted
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>
Jim.

```

```

Jim Lynch Fayetteville Ga K4GV0
'86 GL1200I k4gvo@america.net

```

---

## 111. Bug In Mac Assembler

```

From: W4OQM@aol.com
Date: Sun, 19 Feb 1995 14:43:43 -0500
To: dsp-93@tapr.org
Message-ID: <950219144342_26209569@aol.com>
Rendered body type: text/plain

```

The assembler in the "DSP-93Control" program for the Mac has a bug with the LDPK instructions. I submit the following example:

```

1 0000 ; File: LDPKText.asm
2 0000 ; Author: C. Wells
3 0000 ; Date written: 2/19/95
4 0000 ;
5 0000 c800 LDPK 0h
6 0001 c800 LDPK 1h
7 0002 c800 LDPK 2h
8 0003 c800 LDPK 4h
9 0004 c800 LDPK 8h
10 0005 c800 LDPK 10h
11 0006 c800 LDPK 20h
12 0007 c800 LDPK 40h
13 0008 c801 LDPK 80h
14 0009 c802 LDPK 100h
15 000a c804 LDPK 200h ; Bigger than 9 bits!
16 000b c808 LDPK 400h ; Bigger than 9 bits!
17 000c c810 LDPK 800h ; Bigger than 9 bits!
18 000d c820 LDPK 1000h ; Bigger than 9 bits!
19 000e c840 LDPK 2000h ; Bigger than 9 bits!
20 000f c880 LDPK 4000h ; Bigger than 9 bits!
21 0010 c900 LDPK 8000h ; Bigger than 9 bits!
22 0011 .end

```

The assembler seems to be using the upper 9 bits of a 16-bit integer rather than using the lower 9 bits.

```

73,
Charlie :-(
W4OQM@aol.com

```

---

## 112. Message from VE3EGO

```

From: rparsons@bga.com (Ronald G. Parsons)
Date: Sun, 19 Feb 1995 07:12:36 -0600

```

To: dsp-93@tapr.org  
Message-ID: <ab6cf379020210044baf@[204.181.160.1]>  
Rendered body type: text/plain

Via KO-23:

To : VE3EGO  
From: W5RKN  
Time: 130109UTC  
Date: 19 Feb 1995  
-----

Hello Syd,

>Question.On the W9GR\_93 CW filter where is the switch that invokes the  
>"pass thru" audio mode that makes finding CW signals easy. I cannot find  
>it for looking!

Don't know. I'll post this on dsp-93 and perhaps someone else knows.

>BTW it sure would be very convenient to have a "clear scope screen"  
>button on the analyzer and scope screens. To clear the screen now you  
>have to exit and reload.

It's easy. Just click on Persistence OFF. But you are right, it would be  
nice to have a clear button.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : KO-23, KO-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 113. Message from VE3EGO

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 19 Feb 1995 06:43:53 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6ced0101021004c66a@[204.181.160.10]>  
Rendered body type: text/plain

Via KO-23:

To : VE3EGO  
From: W5RKN  
Time: 123838UTC  
Date: 19 Feb 1995  
-----

Hello Syd,

>I am in the process of setting up an Event in WiSP to load  
>the the modem programs. It appears that WiSP only allows  
>you to run one EXE program. In order to load the .OBJ file,  
>After running D93WE.EXE as you know you must change  
>directories to access and download the .OBJ files. How can  
>you download .OBJ file using the WiSP EVENT feature.  
>

>I sure hope that this can be done automatically Hi.

It's easy. Just set up a DOS .BAT file and a Windows .PIF for it.  
Do anything you want. Just have WiSP fire off the PIF file. Use the  
DOS program DSPLOAD rather than D93WE.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : KO-23, KO-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 114. Message from W6SHP

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 19 Feb 1995 06:43:47 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6ce8800021004b997@[204.181.160.10]>  
Rendered body type: text/plain

Via KO-23:

From: W6SHP  
To: K6OYY W5RKN  
Subject: dsp-93 progress report  
Keywords:

-----  
To: k6oyy w5rkn  
From: W6SHP  
Time: 060606 UTC  
Date: 19FEB95  
Title: dsp-93 progress report  
-----

Hello Ron and Jim,

Thanks to both of you for your informative and helpful DSP-93 uploads. I hope to buy a 14.4K baud modem Monday. Hopefully I'll be in the internet soon, assuming I can find a low cost connection. I hope that the high speed modem will make my internet WWW connection affordable. My last try using telephone BBSs pushed my phone bills into the three digit range every month!

I have all my cable connections well documented in my "home brew" notebook. But I never drew a block diagram of how they all fit together. At the time it was "obvious", but not so almost four years later. I now drew that block diagram, and confirmed the source of my cable error.

It now appears I will be doing more testing and experimenting than I originally thought. So I decided to add my DSP-93 to my existing PSK and FSK modem cable system so I can switch between all of them easily. This will allow easy performance comparisons between my hardware modems and the DSP. Also I will have less anxiety when I make any hardware mods on the DSP, as I won't be QRT while the DSP is on my work bench (or if I screw up with a mod).

Ron, I dread the thought of taking the two PCBs apart to do any mod, like switching C212-213. I'll make that fix when another more pressing need to separate those board arises. Is there a "trick" to make that separation easy? As a beta tester I assume you have done this a few times.

So this weekend I'll be making "Y" connector cables for my DIN-8, DIN-5 and RXA/TXA/PTT lines and add another 2P3T audio switch. I'll hold off on my "simplified" cabling until the DSP is working on all modes and has an internal TNC. I hope this TNC is just a small "piggyback" PC and not a new top or bottom board.

Jim, my concern for the FT-736R software is for 1200 baud PSK operation. Doppler needs to be tracked with the up/down mic lines, as it is done with our TAPR PSK modem. Ron, I assume the DSP-93 does this for the Icom and Kenwood rigs. Also the RXA and TXA signal levels for the FT-736R need to be set in the software, as the AFSK, PSK and FSK signal all operate with different signal levels. So we need to set R213-6 for the mode needing the most drive, and decrease the gain in software for the remaining modes.

Thanks for the PK-232 info. Ron, you may recall an article in Amsat Journal a while back on PK-232 problems on the Microsats. That was written by me. I was hoping I would not go through another period of frustration because of the PK-232 not being an "exact" TNC-2 clone. Back then I discovered "KISS" was not really "simple", as the name implies.

I do have a question for you both. On other digital modes I have

been using Lan-Link as my terminal program. I like it's split screen display for keyboard to keyboard QSO's, the ease of inserting canned text for often repeated phrases and info, as well as the other bells and whistles that make KB-KB QSO's enjoyable. Before I used Procomm, but found it too clumsy for ham operation. Lan-Link automatically uploads configuration info so all I need to do is select a mode and speed and Lan-Link loads what ever the PK-232 needs. But it is "hard coded" so I cannot adopt it to do what I need for the DSP-93. I am using Procomm (DOS version) again, and although it works, I hate it! Lan-Link spoiled me. Can you suggest some modern day terminal programs I could use?

I downloaded TPK from UO-22 but it did not install properly and I get French text even after trying G1DIL's English language conversion program. I suspect something was corrupted or missing in that upload. A friend of mine tried Procomm for Windows, but says it is not good for ham QSO use.

I have changed by PB.EQN so I now automatically download all messages with "DSP93" or "DSP-93" in the title, keyword or destination field. So hopefully you will not have to repeat info for me if you have told someone else.

Jim, I hope you are well soon, and that you get your DSP-93 built soon. And Ron, thanks for your fast reply to my queries.

73    Howard    W6SHP  
                  @ KO-23 & AO-16

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 115. Which TNC?

From: PAUL SHUCH <PSHUCH@pct.edu>  
Date: Fri, 17 Feb 1995 09:45:44 -0500  
To: dsp-93@tapr.org  
Message-ID: <sf446f4b.001@pct.edu>  
Rendered body type: text/plain

Hi, gang.

Thanks to all the wonderful dialogs (debates?) on the list, I've managed to avoid at least a few of the pitfalls. I really appreciate the way everyone has been communicating!

With my DSP-93 up and running (at least passing all tests), I'm now ready to begin interfacing it to something. It is my desire to purchase a dedicated TNC for this project.

QUESTION: for maximum flexibility along with minimum interface hassles, which of the various commercially available TNC's would you folks recommend I purchase for a dedicated DSP-93 setup? Any and all recommendations would be appreciated. Obviously, I want to keep things simple, affordable, powerful and upgradable (I don't ask for much, do I?)

Vy 73 to all,      Paul    n6tx

---

## 116. Re: [DSP-93:393] Re: TESTING / INTERFACING NOTES

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 20 Feb 1995 15:06:03 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6eb19505021004f8ae@[204.181.160.6]>  
Rendered body type: text/plain

>> A better place is in the directory where d93we.exe resides. That appears to  
>> be the default directory for downloading.  
>

>A better solution might be to include a browse feature in the  
>program. I haven't figured out how to change the directory so I have  
>to resort to typing the complete path. Sounds like I'm not the only  
>one. I'd take a stab at it, but I don't have Borland C++.

Jim,

When I choose Download in D93WE, I get the standard Windows file open dialog. This lets you browse anywhere.



Ron W5RKN

also:  
w5rkn@amsat.org

---

## 117. Re: [DSP-93:394] Bug In Mac Assembler

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 20 Feb 1995 15:06:08 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab6eb21306021004162d@[204.181.160.6]>  
Rendered body type: text/plain

>The assembler in the "DSP-93Control" program for the Mac has a bug with the  
>LDPK instructions. I submit the following example:  
...  
>The assembler seems to be using the upper 9 bits of a 16-bit integer rather  
>than using the lower 9 bits.  
>  
>73,  
>Charlie :-(  
>W40QM@aol.com

You are apparently not using the latest version. I caught and fixed this  
bug some time ago. Look for MacDSP121.sit or MacDSP121.sit.hqx on  
ftp.tapr.org.

The latest version is 1.2.1.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 118. Re: [DSP-93:398] Which TNC?

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Mon, 20 Feb 1995 16:18:26 -0500  
To: dsp-93@tapr.org  
Message-ID: <9502202111.AA03115@camel.campbell.edu>  
Rendered body type: text/plain

Paul,

I am using the MFJ-1270C. It is cheap (~\$115 new) and works like a charm.  
The DSP-93 "plugs right in" (you have to make your own cable) thru a  
disconnect  
header on the MFJ. It is a "true" TNC-2 clone and goes in/out of kiss mode  
just fine.

I \*did\* make a few mods that make the use of the 1270C very  
easy/convenient.

1) I put a switch (DPDT) on the front panel that does two things:

1a) switch between 9600 and 1200 baud (I hate those little dip switches on  
the back!)

1b) lights the TURBO LED on the front when in 9600 position, shuts it off  
for 1200 baud. You can \*\*SEE\*\* what baud your TNC is set to from across  
the room!

2) I used the straight connector on the back (the one that is supposed to  
be used for TTL levels I think) and cut all traces (except ground) to the  
pins; ran a cable (5 wire) from the modem disconnect header inside of the  
MFJ-1270C to these pins - they are mostly "pre-silk screened", too :)  
Then I used the supplied external plastic connector that fits this pin set,  
and made a cable that terminates to a DB25 connector that plugs into the  
back of the DSP93.

That gives me one cable that stays inside of the MFJ-1270C and runs to a  
pin jack on the back of the TNC, and another cable that runs from the TNC to  
the DSP-93.

These little things are things I found handy after months of playing with  
the unit during beta-testing. You might consider these issues when you are  
making a selection.

The BEST solution will be the TNC-95 !!! :) :) :) Until then, the MFJ-1270

is  
fine. I did NOT have to cut any of the traces at the TNC disconnect  
header. I chose to use the jack on the back and cut its traces for "ease  
of use". I hope this helps!

>Hi, gang.  
> Thanks to all the wonderful dialogs (debates?) on the list, I've  
>managed to avoid at least a few of the pitfalls. I really appreciate the  
>way everyone has been communicating!  
> With my DSP-93 up and running (at least passing all tests), I'm now  
>ready to begin interfacing it to something. It is my desire to purchase a  
>dedicated TNC for this project.  
> QUESTION: for maximum flexibility along with minimum interface  
>hassles, which of the various commercially available TNC's would you  
>folks recommend I purchase for a dedicated DSP-93 setup? Any and all  
>recommendations would be appreciated. Obviously, I want to keep  
>things simple, affordable, powerful and upgradable (I don't ask for much,  
>do I?)  
> Vy 73 to all, Paul n6tx

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 119. TAPR.ORG Location Change

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 20 Feb 1995 15:23:15 -0600 (CST)  
To: tapr-bb@tapr.org (TAPR-BB mailing), bbssig@tapr.org (BBS SIG mailing),  
netsig@tapr.org (NETSIG mailing), dsp-93@tapr.org (DSP-93 Build),  
hfsig@tapr.org (HF SIG mailing), aprssig@tapr.org  
Message-ID: <199502202123.PAA09624@Joyce-Perkins.tenet.edu>  
Rendered body type: text/plain

TAPR.ORG has been relocated and has a new numeric IP address of:

204.96.214.85

DNS servers should have been updated starting yesterday.....but just in case  
yours is a little slow, you can use the numeric IP until things get fully  
updated.

The new location allows for a faster connection into Internet which should  
help the site in the long run.

Thanks to Lee, N5LYT, for his continued help and effort on the TAPR.ORG  
site.

Cheers - Greg

---

## 120. D93WE download

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)  
Date: Mon, 20 Feb 95 16:07:29 CST  
To: dsp-93@tapr.org  
Message-ID: <9502202207.AA04210@eagle.aud.alcatel.com>  
Rendered body type: text/plain

> >  
> > > 7 Copy all your \*.OBJ files into the WINDOWS subdirectory so that they  
> > > are available to DOWNLOAD from the WINDOWS DSP93WE screen.  
> >  
> > A better place is in the directory where d93we.exe resides. That appears to  
> > be the default directory for downloading.  
> A better solution might be to include a browse feature in the  
> program. I haven't figured out how to change the directory so I have  
> to resort to typing the complete path. Sounds like I'm not the only  
> one. I'd take a stab at it, but I don't have Borland C++.  
> >  
> >  
> >  
> Jim.  
>  
> Jim Lynch Fayetteville Ga K4GVO  
> '86 GL1200I k4gvo@america.net

>

Jim: I'm not sure I understand the problem. There is a drop-down file search browser from the DOWNLOAD menu, so you should be able to select a file from any directory (on any drive) without typing anything. Does this not function? Have I misunderstood the problem?

- Tom, N5EG

---

## 121. Re: [DSP-93:399] Re: TESTING / INTERFACING NOTES

From: "Jim Lynch" <k4gvo@america.net>  
Date: Mon, 20 Feb 1995 22:09:02 -0500  
To: dsp-93@tapr.org  
Message-ID: <199502210315.DAA15867@america.net>  
Rendered body type: text/plain

> Date: Mon, 20 Feb 1995 16:07:22 -0600  
> Reply-to: dsp-93@tapr.org  
> From: rparsons@bga.com (Ronald G. Parsons)  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:399] Re: TESTING / INTERFACING NOTES

> When I choose Download in D93WE, I get the standard Windows file open > dialog. This lets you browse anywhere.  
How interesting. Wonder why I don't. I see a window that is titled File Open. Has a block titled Filename and has \*.obj in it. Two buttons to the right, Ok and Cancel.  
Below the Filename is a directory: followed by the directory that I loaded the program from. Below this line are two boxes, the left Ah never mind. I finally clicked on the .. and it worked. Sorry for the confusion.

>  
Jim.  
Jim Lynch      Fayetteville Ga      K4GV0  
'86 GL1200I    k4gvo@america.net

---

## 122. final check

From: YS8Y-YG@j.asahi-net.or.jp  
Date: 22 Feb 95 22:21:44 JST  
To: dsp-93@tapr.org  
Message-ID: <2F4B3A68.8D37.001@j.asahi-net.or.jp>  
Rendered body type: text/plain

Final check:

I have next problem.

- (1)Power switch on. The two outside LEDs light up.-----OK  
then, I can see an asterisk(\*) on my computer.-----OK  
But, When I typed in question mark(?) the monitor commands didn't scroll up.  
My terminal program(cct-98) instruct me that CTS signal is off.  
I checked serial cable in many times. Cable connection was correct.  
My computer is NEC(pc-98n).  
P.S. CCT-98 terminal program is no problem in DSP-12(L.L.GRACE).
- (2)I connected same serial cable in pc/at.  
Window terminal program D93WE was running on my computer.  
Then Power switch on. The two outside LEDs light up.-----OK  
then, I can see an asterisk(\*) on my computer.-----OK  
When I typed in question mark(?) the monitor commands scroll up.-----OK  
SUCCEED!

Please tell me the difference between (1) and (2) of terminal program.

de              JF5KAT      Kagawa Japan

---

## 123. Re: [DSP-93:405] final check

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 22 Feb 1995 09:02:39 -0500  
To: dsp-93@tapr.org  
Message-ID: <9502221355.AA15681@camel.campbell.edu>  
Rendered body type: text/plain

In your cct-98 program, please make CERTAIN that the handshaking is OFF.  
No SOFTcontrol, NO XON/XOFF, No hardware control.

My guess is that your problem with cct-98 and successes with D93WE can be explained by differences in the handshaking between the computer and the DSP-39.

The DSP-93 wants NO HANDSHAKING of any sort!

I hope that helps. Glad to see you have a functional DSP-93!!!!

```
>Final check:
>
>I have next problem.
>
>(1)Power switch on. The two outside LEDs light up.-----OK
> then, I can see an asterisk(*) on my computer.-----OK
> But,When I typed in question mark(?) the monitor commands
> didn't scroll up.
> My terminal program(cct-98) instruct me that CTS signal is off.
> I checked serial cable in many times. Cable connection was correct.
> My computer is NEC(pc-98n).
> P.S. CCT-98 terminal program is no problem in DSP-12(L.L.GRACE).
>
>(2)I connected same serial cable in pc/at.
> Window terminal program D93WE was running on my computer.
> Then Power switch on. The two outside LEDs light up.-----OK
> then, I can see an asterisk(*) on my computer.-----OK
> When I typed in question mark(?) the monitor commands
> scroll up.-----OK
> SUCCEED!
>
>Please tell me the difference between (1) and (2)of terminal program.
>
> de JF5KAT Kagawa Japan

Mark L. Hammond, Ph. D. (KC4EBR)
hammond@camel.campbell.edu

Campbell University
Department of Biology
Buies Creek, NC 27506
1-919-893-1734 or
1-800-334-4111, ext. 1734
```

---

## 124. Re: [DSP-93:405] final check

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 22 Feb 1995 09:09:51 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab70f65700021004fe46@[204.96.0.40]>  
Rendered body type: text/plain

```
>Final check:
>
>I have next problem.
>
>(1)Power switch on. The two outside LEDs light up.-----OK
> then, I can see an asterisk(*) on my computer.-----OK
> But,When I typed in question mark(?) the monitor commands
> didn't scroll up.
> My terminal program(cct-98) instruct me that CTS signal is off.
> I checked serial cable in many times. Cable connection was correct.
> My computer is NEC(pc-98n).
> P.S. CCT-98 terminal program is no problem in DSP-12(L.L.GRACE).
>
>(2)I connected same serial cable in pc/at.
> Window terminal program D93WE was running on my computer.
> Then Power switch on. The two outside LEDs light up.-----OK
> then, I can see an asterisk(*) on my computer.-----OK
> When I typed in question mark(?) the monitor commands
> scroll up.-----OK
> SUCCEED!
>
>Please tell me the difference between (1) and (2)of terminal program.
>
> de JF5KAT Kagawa Japan
```

The DSP-93 does not provide the hardware handshake signal CTS. You must use terminal software that does not require this.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 125. Re: [DSP-93:405] final check

From: Roy Welch <rdw@crl.com>  
Date: Wed, 22 Feb 1995 07:32:41 -0800 (PST)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950222073047.26985A-100000@crl3.crl.com>  
Rendered body type: text/plain

You might check to be sure the Windows Terminal program is setup the same in both PCs. It sounds like the parameters are different. You are probably not sending any data in the first case for the DSP-93 to receive.

73, Roy -- W0SL  
-----

On Wed, 22 Feb 1995 YS8Y-YG@j.asahi-net.or.jp wrote:

```
> Final check:
>
> I have next problem.
>
> (1)Power switch on. The two outside LEDs light up.-----OK
> then, I can see an asterisk(*) on my computer.-----OK
> But, When I typed in question mark(?) the monitor commands
> didn't scroll up.
> My terminal program(cct-98) instruct me that CTS signal is off.
> I checked serial cable in many times. Cable connection was correct.
> My computer is NEC(pc-98n).
> P.S. CCT-98 terminal program is no problem in DSP-12(L.L.GRACE).
>
> (2)I connected same serial cable in pc/at.
> Window terminal program D93WE was running on my computer.
> Then Power switch on. The two outside LEDs light up.-----OK
> then, I can see an asterisk(*) on my computer.-----OK
> When I typed in question mark(?) the monitor commands
> scroll up.-----OK
> SUCCEED!
>
> Please tell me the difference between (1) and (2) of terminal program.
>
> de JF5KAT Kagawa Japan
>
```

---

## 126. [DSP-93] DSP-93@PACCOMM.COM

From: TAPR MAIL MGMT ACCOUNT <taprmail@dingus.n5lyt.datarace.com>  
Date: Mon, 20 Feb 1995 19:47:26 -0600 (CST)  
To: DSP-93@PACCOMM.COM  
Message-ID: <199502210147.TAA12644@dingus.n5lyt.datarace.com>  
Rendered body type: text/plain

Dear TAPR Listserv Member:

This is a monthly message to check to see that you are still active on this Mail list and to uncover any bad Internet addresses.

To stay with this mail list, simply DELETE this message. No other action is required. -----

If you want to unsubscribe, send e-mail to listserv@tapr.org with a message of unsubscribe listname, where listname is the name of the list.

Cheers - TAPR

---

## 127. Re: [DSP-93:400] Re: Bug In Mac Assembler

From: W4OQM@aol.com  
Date: Wed, 22 Feb 1995 21:38:01 -0500  
To: dsp-93@tapr.org  
Message-ID: <950222213800\_29602834@aol.com>  
Rendered body type: text/plain

Re: [DSP-93:400] Re: Bug In Mac Assembler

Ron W5RKN,

The version of the assembler that I'm using (1.2.0) is whatever was on the floppy disk packed with the DSP93 kit. If that's not the most recent version, then the kit was being shipped with an old one. Other folks using the Mac need to know this.

For the last several days, "ftp.tapr.org" has been unavailable. I'll keep trying. In the meantime, I'll keep mentally multiplying my direct page constants by 128.

73,  
Charlie W40QM :-)  
W40QM.aol.com

---

## 128. Re: [DSP-93:410] Re: Bug In Mac Assembler

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 22 Feb 1995 21:26:13 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199502230326.VAA19107@Joyce-Perkins.tenet.edu>  
Rendered body type: text/plain

According to W40QM@aol.com:

>  
> The version of the assembler that I'm using (1.2.0) is whatever was on the  
> floppy disk packed with the DSP93 kit. If that's not the most recent  
> version, then the kit was being shipped with an old one. Other folks using  
> the Mac need to know this.

Ron updated the the software after the mailing as completed....that why I believe he posted a message here after he made it availabl on ftp.tapr.org.

> For the last several days, "ftp.tapr.org" has been unavailable. I'll keep  
> trying. In the meantime, I'll keep mentally multiplying my direct page  
> constants by 128.  
>

We were relocating the server this last weekend. Your DNS should now point to the correct place. I also posted a message on Sunday with the new IP address, in case you needed the numeric IP. It is now: 204.96.214.85

Cheers - Greg

---

## 129. Re: [DSP-93:410] Re: Bug In Mac Assembler

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 22 Feb 1995 22:07:47 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab71b997010210045b78@[204.181.160.14]>  
Rendered body type: text/plain

>Re: [DSP-93:400] Re: Bug In Mac Assembler

>  
>Ron W5RKN,  
>  
>The version of the assembler that I'm using (1.2.0) is whatever was on the  
>floppy disk packed with the DSP93 kit. If that's not the most recent  
>version, then the kit was being shipped with an old one. Other folks using  
>the Mac need to know this.  
>  
>For the last several days, "ftp.tapr.org" has been unavailable. I'll keep  
>trying. In the meantime, I'll keep mentally multiplying my direct page  
>constants by 128.  
>  
>73,  
>Charlie W40QM :-)  
>W40QM.aol.com

That's right, I discovered the bug in mid January. I got into ftp.tapr.org just now without problem. Look for MacDSP121.sit.hqx in tapr/dsp93/UPLOAD.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 130. info

From: matem@ipv36.unipv.it (dip. Matematica- Rossella)  
Date: Thu, 23 Feb 1995 10:56:24 +0100  
To: dsp-93@tapr.org  
Message-ID: <9502230956.AA02555@ipv36>  
Rendered body type: text/plain

hello  
after many test,the machine go....I am active on terrestrial packet but only  
with fskiss.obj.I have a eeprom tf27(hostmode)and all go.With a 1.18a and fskxx.obj not work.Is this  
right??  
For the comparison with a tnc2 and g3ruh 9k6 modem,the old system is more sensible with a low signals.  
A question.What the correct use of allmonixx.obj? No info in the docs.  
73 from dolomites  
franco in3dyg

---

### 131. Re: [DSP-93:413] info

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 23 Feb 1995 06:41:29 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab7231a801021004916b@[204.181.160.26]>  
Rendered body type: text/plain

>hello  
>after many test,the machine go....I am active on terrestrial packet but only  
>with fskiss.obj.I have a eeprom tf27(hostmode)and all go.With a 1.18a and  
>fskxx.obj not work.Is this right??  
>For the comparison with a tnc2 and g3ruh 9k6 modem,the old system is more  
>sensible with a low signals.  
>A question.What the correct use of allmonixx.obj? No info in the docs.  
>73 from dolomites  
>franco in3dyg

I am glad you are having success.

Do you find FSKISI better than FSK for terrestrial work?  
Don't know of problems with 1.18a.

>From the source to ALLMON...

; Dedicated to copy audio from defined port to speaker output.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 132. comp.dsp

From: "Alberto di Bene (xx39-2-596.25744)" <dibene@VNET.IBM.COM>  
Date: Thu, 23 Feb 95 11:47:53 EST  
To: dsp-93@tapr.org  
Message-ID: <199502231516.JAA14985@dingus.n5lyt.datarace.com>  
Rendered body type: text/plain

Does anybody know from which ftp site can I retrieve the comp.dsp usenet ?

Thanks.

Alberto di Bene                    dibene@vnet.ibm.com            i2phd@amsat.org

-----  
GENESYS.GOD(5486): F349 REALITY.SYS not found. Reboot Universe ? (Y/N/Q)  
-----

---

### 133. File Transfers

From: wtb@partyline.org  
Date: Thu, 23 Feb 95 21:42:11 -0600  
To: dsp-93@tapr.org  
Message-ID: <9502232142.0UHLN00@partyline.org>  
Rendered body type: text/plain

What is ftp.tapr.org? Is there a way to use ftpmail?  
Is any of the source code for the distributed programs available?  
It's pretty tough to understand and modify the .asm files or the  
.obj files without and understanding of the sources.

Bill    NOLIK            wtb@partyline.org

---

### 134. Re: [DSP-93:412] Bug In Mac Assembler

From: W40QM@aol.com  
Date: Fri, 24 Feb 1995 01:26:08 -0500  
To: dsp-93@tapr.org  
Message-ID: <950224012607\_30879787@aol.com>  
Rendered body type: text/plain

I was able to get into "ftp.tapr.org" and successfully transferred "MacDSP121.sit.hqx".

"BinHex 5.0" had problems converting the ".hqx" file into the ".sit" file. It came up with the correct output filename (but it probably got that from the ".hqx" filename). It then showed a dialog box with a nonsense type (%!!) and creator (!#`J). After a brief moment, it gave me a dialog box with a "no checksum error" message. When the dust settled, there was a 6-k ".sit" file on the desktop. I didn't try unstuffing that.

I transferred "MacDSP121.sit.hqx" from "ftp.tapr.org" again with the same results. My copy of "BinHex 5.0" works fine unstuffing the ".hqx" file that came on the floppy packed with the kit, so I think that's OK.

Any suggestions>

Charlie W40QM :-(

---

### 135. Re: [DSP-93:416] File Transfers

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 24 Feb 1995 06:49:54 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab7385ca000210047b58@[204.96.0.41]>  
Rendered body type: text/plain

>What is ftp.tapr.org? Is there a way to use ftpmail?  
>Is any of the source code for the distributed programs available?  
>It's pretty tough to understand and modify the .asm files or the  
>.obj files without an understanding of the sources.  
> Bill NOLIK wtb@partyline.org

Bill,

ftp.tapr.org is an ftp site provided by TAPR. Don't know about ftpmail -- go ahead and try it.

The same source code as is on the distribution floppy is available on the ftp site (in the diskette images). The .asm files IS the source code for the modems, test programs etc. What are you looking for in addition?

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 136. Re: [DSP-93:417] Re: Bug In Mac Assembler

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 24 Feb 1995 07:03:34 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab738912020210044070@[204.181.160.7]>  
Rendered body type: text/plain

>I was able to get into "ftp.tapr.org" and successfully transferred  
>"MacDSP121.sit.hqx".

>

> "BinHex 5.0" had problems converting the ".hqx" file into the ".sit" file.  
> It came up with the correct output filename (but it probably got that from  
>the ".hqx" filename). It then showed a dialog box with a nonsense type  
>(%!!) and creator (!#`J). After a brief moment, it gave me a dialog box  
>with a "no checksum error" message. When the dust settled, there was a 6-k  
>".sit" file on the desktop. I didn't try unstuffing that.

>

>I transferred "MacDSP121.sit.hqx" from "ftp.tapr.org" again with the same  
>results. My copy of "BinHex 5.0" works fine unstuffing the ".hqx" file that  
>came on the floppy packed with the kit, so I think that's OK.

>

>Any suggestions>

>

>Charlie W40QM :-(

Charlie,



I just logged into ftp.tapir.org and downloaded MacDSP121.sit.hqx using Fetch. I came down just fine and appeared in my folder as MacDSP121.sit. Used StuffitExpander to unstuff it (that worked fine). Must be something wrong on your end.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 137. help

From: matem@ipv36.unipv.it (dip. Matematica- Rossella)  
Date: Fri, 24 Feb 1995 15:06:48 +0100  
To: dsp-93@tapir.org  
Message-ID: <9502241406.AA05759@ipv36>  
Rendered body type: text/plain

Can anyone upload on the ko-23 the 2.16 images and also the 1.19 for tnc2??  
I have not permission for ftp.....  
tnx in advance and good week-end from Dolomites  
franco in3dyg

---

## 138. Re: [DSP-93:417] Re: Bug In Mac Assembler

From: Roy Welch <rdw@crl.com>  
Date: Fri, 24 Feb 1995 09:18:37 -0800 (PST)  
To: dsp-93@tapir.org  
Cc: dsp-93@tapir.org  
Message-ID: <Pine.SUN.3.91.950224091734.2994A-100000@crl6.crl.com>  
Rendered body type: text/plain

Did you issue the "bin" command to set the transfer to the binary mode before you issued the "get" command?  
73, Roy -- W0SL

On Fri, 24 Feb 1995 W40QM@aol.com wrote:

> I was able to get into "ftp.tapir.org" and successfully transferred  
> "MacDSP121.sit.hqx".  
>  
> "BinHex 5.0" had problems converting the ".hqx" file into the ".sit" file.  
> It came up with the correct output filename (but it probably got that from  
> the ".hqx" filename). It then showed a dialog box with a nonsense type  
> (%!!!) and creator (!#J). After a brief moment, it gave me a dialog box  
> with a "no checksum error" message. When the dust settled, there was a 6-k  
> ".sit" file on the desktop. I didn't try unstuffing that.  
>  
> I transferred "MacDSP121.sit.hqx" from "ftp.tapir.org" again with the same  
> results. My copy of "BinHex 5.0" works fine unstuffing the ".hqx" file that  
> came on the floppy packed with the kit, so I think that's OK.  
>  
> Any suggestions?  
>  
> Charlie W40QM :-(  
>  
>

---

## 139. Re: [DSP-93:421] Re: Bug In Mac Assembler

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 24 Feb 1995 14:04:22 -0600  
To: dsp-93@tapir.org  
Message-ID: <ab73eab900021004323f@[204.181.160.8]>  
Rendered body type: text/plain

>Did you issue the "bin" command to set the transfer to the binary mode  
>before you issued the "get" command?  
>73, Roy -- W0SL  
>

You "shouldn't" have to on an hqx file (it is a text representation).

Of, course, I could be wrong!

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 140. New Schematics Available!

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 24 Feb 1995 14:10:44 -0600 (CST)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199502242010.0AA02059@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

Re: DSP-93 Improved Schematics now available  
Date: 2/24/95

Good New!

The new and improved 'B' size drawings of the DSP-93 are now available at the TAPR office. All schematics have been updated and are very readable in the '11x17' format. The cost is \$5.00 plus \$2.00 shipping and handling (within the US).

We will have copies available at the TAPR meeting in St Louis in two weeks.

The new schematic size will be shipped as standard with the DSP-93 kits starting with the next production.

To get your copy, contact Dorothy at the TAPR office:

Office (817) 383-0000  
Fax (817) 566-2544  
E-mail TAPR@TAPR.ORG

---

## 141. Re: [DSP-93:423] New Schematics Available!

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 24 Feb 1995 15:17:18 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab73fcdd000210047559@[204.181.160.14]>  
Rendered body type: text/plain

>Re: DSP-93 Improved Schematics now available  
>Date: 2/24/95

>

>Good New!

>

>The new and improved 'B' size drawings of the DSP-93 are now available at  
>the TAPR office. All schematics have been updated and are very readable in  
>the '11x17' format. The cost is \$5.00 plus \$2.00 shipping and handling  
>(within the US).

>

Could you have the 8.5 x 11 inch PostScript files posted to ftp.tapr.org.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 142. Re: [DSP-93:422] Re: Bug In Mac Assembler

From: W4OQM@aol.com  
Date: Sat, 25 Feb 1995 01:29:44 -0500  
To: dsp-93@tapr.org  
Message-ID: <950225012942\_31826759@aol.com>  
Rendered body type: text/plain

All is now well. I have "DSP-93Control" Version 1.2.1 up and running on my Mac.

Ron was correct. The file is a text representation. The question is: which standard text representation is it? (That's the great thing about standards in this business. There's so many to choose from!)

Depending on how a text line is terminated, there are at least three common answers: 1) Unix (LF), 2) Mac (CR), and 3) MS/DOS (CR/LF). The file "MacDSP121.sit.hqx" on "ftp.tapr.org" is in Unix text format. This gets transferred to my Mac without any conversion. The lack of CRs caused BinHex (version 5) to see one really long line and choke. I created a local filter that replaced the LF's with CR's and BinHex was happy. It was all down hill from there.

73,  
Charlie :-)  
W40QM@aol.com

---

### 143. Re: [DSP-93:423] New Schematics Available!

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 25 Feb 1995 11:00:51 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab7511e300021004211b@[204.96.0.134]>  
Rendered body type: text/plain

I have placed a copy of the PostScript files for the DSP-93 Improved Schematics in 8.5 x 11 inch form on ftp.tapr.org in the /tapr/dsp93/UPLOAD directory. The file name is dsp93dwg.zip.

Please note that these files are Copyrighted by TAPR.

Ron

>Re: DSP-93 Improved Schematics now available  
>Date: 2/24/95  
>  
>Good New!  
>  
>The new and improved 'B' size drawings of the DSP-93 are now available at  
>the TAPR office. All schematics have been updated and are very readable in  
>the '11x17' format. The cost is \$5.00 plus \$2.00 shipping and handling  
>(within the US).  
>  
>We will have copies available at the TAPR meeting in St Louis in two weeks.  
>  
>The new schematic size will be shipped as standard with the DSP-93 kits  
>starting with the next production.  
>  
>To get your copy, contact Dorothy at the TAPR office:  
>  
>Office (817) 383-0000  
>Fax (817) 566-2544  
>E-mail TAPR@TAPR.ORG

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 144. Re: [DSP-93:420] help

From: Greg Jones <gjones@tenet.edu>  
Date: Sat, 25 Feb 1995 21:39:37 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199502260339.VAA12247@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

The 1.1.9 image should not be released in any electronic form. If you see this, please let me know. It is currently available from the TAPR office for \$15 (with book) not including shipping/handling (\$2.00 US).

Information and TAPR must come to an agreement as to when the 1.1.9 image is placed on the Internet and made available on electronic information services. While the 1.1.9 image could be distributed by amateurs, it must have an accompanying text file that has not been released...thus any distribution by amateurs would be incorrect.

It is a violation of the copyright law if posted, and the satellite license and/or system owner is held responsible for any of these issues I believe. Something else yet to keep in mind.

Cheers - Greg, WD5IVD

-----

According to dip, Matematica- Rossella:

>  
> Can anyone upload on the ko-23 the 2.16 images and also the 1.19 for tnc2??  
> I have not permission for ftp.....  
> tnx in advance and good week-end from Dolomites  
> franco in3dyg  
>

## 145. [DSP-93:418] RE: FILE TRANSFERS

From: wtb@partyline.org  
Date: Sun, 26 Feb 95 20:01:54 -0600  
To: dsp-93@tapr.org  
Message-ID: <9502262001.0552W00@partyline.org>  
Rendered body type: text/plain

Ron

Now I'm really confused. I thought source code was that listed as "C", Pascal, Basic, Fortran, etc. with comments on the important lines that show the reasoning.

This was then compiled to convert to executable machine language and the files were .asm, .pas, etc.

Now that we have two machines I suppose we have to know the target machine for each listing. That for the DSP93 must also be recompiled using the tasm furnished with the kit distribution. How is the difference between Borland TASM and the kit tasm maintained??

The DSP93 .obj files are line after line of 010010001110. Are these obtained by using tasm (kit) on the .asm (kit) files? If so, how do we get TMS320 code from the "C" listing. Need a primer!

Bill Boman NOLIK  
wtb@partyline.org

---

## 146. PostScript files-MAC-

From: Bob\_Winingham@acd.org (Bob Winingham)  
Date: 27 Feb 1995 01:38:57 GMT  
To: dsp-93@tapr.org  
Message-ID: <3514888190.956761@acd.org>  
Rendered body type: text/plain

Note for Macintosh users on printing the PostScript files.

I was able to print the DSP-93 PostScript file to a Laserwriter using Drop\*PS 1.1.3

Drop\*PS ("DPS") is a utility to send text files containing PostScript\* code to any PostScript printer connected to an AppleTalk\* network. (DPS can also download EPSF-format files.)

A few pixels were shaved off of the tops of one or two drawings. The a-size output is still very readable.

I was unable to print the two larger PS files using Send PostScript feature of BBEdit version 2.5.5.

73  
Bob KC5EJK

---

## 147. Re: [DSP-93:428] RE: FILE TRANSFERS

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 27 Feb 1995 07:47:44 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab7786d8000210043c1e@[204.181.160.5]>  
Rendered body type: text/plain

>Ron

> Now I'm really confused. I thought source code was that listed  
>as "C", Pascal, Basic, Fortran, etc. with comments on the important  
>lines that show the reasoning.  
> This was then compiled to convert to executable machine language  
>and the files were .asm, .pas, etc.

No, the original source code for all the object files distributed was written in TMS320C25 assembly language. TASM (on the diskettes) is a PC based assembler for TMS320 code. The source code is in the ASM directory.

> Now that we have two machines I suppose we have to know the target  
>machine for each listing. That for the DSP93 must also be recompiled  
>using the tasm furnished with the kit distribution. How is the  
>difference between Borland TASM and the kit tasm maintained??

What two machines? What is Borland TASM? Is that a x86 assembler? If so, it has no relevance to the DSP-93.

> The DSP93 .obj files are line after line of 010010001110. Are these  
>obtained by using tasm (kit) on the .asm (kit) files? If so, how  
>do we get TMS320 code from the "C" listing. Need a primer!

There is no C code involved. See above.

> Bill Boman     NØLIK  
> wtb@partyline.org

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 148. Re: [DSP-93:429] PostScript files-MAC-

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 27 Feb 1995 07:47:49 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab77880f01021004854d@[204.181.160.5]>  
Rendered body type: text/plain

>Note for Macintosh users on printing the PostScript files.  
>  
>I was able to print the DSP-93 PostScript file to a Laserwriter  
>using Drop\*PS 1.1.3  
>  
>Drop\*PS ("DPS") is a utility to send text files containing PostScript\*  
>code to any PostScript printer connected to an AppleTalk\* network.  
>(DPS can also download EPSF-format files.)  
>  
>A few pixels were shaved off of the tops of one or two drawings.  
>The a-size output is still very readable.  
>  
>I was unable to print the two larger PS files using Send PostScript  
>feature of BBEEdit version 2.5.5.  
>  
>73  
>Bob KC5EJK

Use the application "LaserWriter Utility" that comes with your LaserWriter printer. It prints them all using the Download PostScript File command.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 149. Re: [DSP-93:430] RE: FILE TRANSFERS

From: mcdermot@aud.alcatel.com (Tom Mcdermott)  
Date: Mon, 27 Feb 1995 08:15:28 -0600  
To: dsp-93@tapr.org  
Message-ID: <95Feb27.081529cst.20483@janus01.aud.alcatel.com>  
Rendered body type: text/plain

Bill, Ron, let me address this.

Unfortunately, both Borland and the supplier of the TMS320 assembler choose to use the name TASM for their respective assemblers. The DSP-93 diskettes contain the TASM for the TMS320 microprocessor and the definition file for the TMS320: TASM3225.TAB.

You do not need any Borland tools for any DSP-93 work. No 80x86 assembly code is provided, and there is no need to use the Borland assembler. Although some of the tools for DSP-93 were written in C++, generally, there is no source code supplied for them, and only the .EXE files are supplied. The Borland compiler (BCC.EXE) is thus also not needed.

In contrast, the DSP-93 disks contain some TMS320 source code, and all the object files for the TMS320 code. You should not need to assemble any TMS320 code, because all the object code is supplied. However you can modify and re-assemble them if you choose.

In practice, if you specify the exact path to the TMS320 TASM.EXE file on your command line, within a batch file, or via D93WE, then the TMS320 TASM will be invoked. If you have set up a path statement in DOS to point to the Borland directories (as many of us have) you will have no problem using the TMS320 TASM with the supplied batch files and D93WE tools.

- Tom, N5EG

---

## 150. Resistor values

From: dhoward@tcet.unt.edu (Doug Howard)  
Date: Mon, 27 Feb 95 22:13:09 CST  
To: dsp-93@tapr.org  
Message-ID: <9502280413.AA172344@tcet.unt.edu>  
Rendered body type: text/plain

Hi all.

I'd like to know what the latest and greatest values are for the gain ladder. These are R201 and R203-R208. Latest I have are listed below, but there may have been some deltas since these were established. Thanks in advance.

73s,  
Doug - KG50A

R201 470K  
R203 15K  
R204 240K  
R205 120K  
R206 62K  
R207 30K  
R208 15K

-<end>-

---

## 151. Re: [DSP-93:433] Resistor values

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 28 Feb 1995 06:45:14 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab78cb3c000210047378@[204.96.0.39]>  
Rendered body type: text/plain

>Hi all.  
>  
>I'd like to know what the latest and greatest values are for the gain  
>ladder. These are R201 and R203-R208. Latest I have are listed below, but  
>there may have been some deltas since these were established. Thanks in  
>advance.  
>  
>73s,  
>Doug - KG50A  
>  
>R201 470K  
>R203 15K  
>R204 240K  
>R205 120K  
>R206 62K  
>R207 30K  
>R208 15K  
>  
>-<end>-

That's the latest.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 152. 1200/9600 Baud Switching

From: DTownsend@aol.com  
Date: Tue, 28 Feb 1995 20:43:56 -0500  
To: DSP-93@tapr.org  
Message-ID: <950228204348\_35374640@aol.com>  
Rendered body type: text/plain

Hi All,

Question/Advice?

I have sucessfully connected and received data on both 1200 and 9600 baud sats using the DSP-93 and the 736 using pb. All is done pretty much manually though.

I need an output from somewhere to operate a relay that selectts the TNC2's radio baud rate. I use a switch now but want the DSP-93 to "signal" the

relay to make the switch automagicly. Any ideas would be appriciated.

Thanks from KE7NR, Don, in Phoenix.

---

### 153. Re: [DSP-93:435] 1200/9600 Baud Switching

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 28 Feb 1995 20:27:03 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab798ac60502100472c1@[204.181.160.32]>  
Rendered body type: text/plain

>Hi All,  
>  
>Question/Advice?  
>  
>I have sucessfully connected and received data on both 1200 and 9600 baud sats  
> using the DSP-93 and the 736 using pb. All is done pretty much manually  
>though.  
>  
>I need an output from somewhere to operate a relay that sellects the TNC2's  
>radio baud rate. I use a switch now but want the DSP-93 to "signal" the  
>relay to make the switch automagicly. Any ideas would be appriciated.  
>  
>Thanks from KE7NR, Don, in Phoenix.

I don't know of a way for the DSP-93 to do this but, if you are using an automated scheduler such as SatSked or WiSP, then the same .BAT program that loads the different modems into the DSP-93 could control an external switch. I use a variety of X-10 controlled switches driven by the scheduler to do stuff like that. E.g. control antenna coax relays.

I'm glad you asked. I believe the TNC-95 will be able to switch the TNC data speed under computer control.

Ron W5RKN

also:  
w5rkn@amsat.org

---

# March 1995

Original source file: dsp.9503

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/dspsig/mail\\_archive/dsp.9503](http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9503)

## 1. Re: [DSP-93:435] 1200/9600 Baud Switching

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Wed, 1 Mar 1995 22:30:05 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503020430.WAA03199@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

According to DTownsend@aol.com:

>  
> radio baud rate. I use a switch now but want the DSP-93 to "signal" the  
> relay to make the switch automagically. Any ideas would be appreciated.  
>  
> Thanks from KE7NR, Don, in Phoenix.  
Don, You have some extra bits in the TNC interface that are not being used.  
Some of these bits are also connected to LEDs so you could track the  
switching process.

You have all the schematic documentation and IO port information needed to  
track down a bit to use and to add the code required to operate the relay  
via a bit. It may take time but you can probably work through it.

The output at the TNC interface is a ttl level. This means you will see a  
+5V and ground signal. You can only sink or source a few milliamps in/out of  
this port. If you relay requires more current then you may need to build an  
interface.

Hope this helps.

Bob Stricklin, N5BRG

>

---

## 2. A Happy user

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 2 Mar 1995 22:28:33 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab7c4987040210048d8d@[204.181.160.4]>  
Rendered body type: text/plain

Copied off of K0-23.

From: VE3EGO  
To: ZS6BMN  
Subject: Re: DSP93..it works fine  
Keywords:

-----  
To : ZS6BMN  
From: VE3EGO  
Time: 021022UTC  
Date: 03 Mar 1995  
-----

Hi Jan,

>Thanks for all the uploads. I have received the A0-13 TLM on K0-25 and the  
>art images on K0-23 are super! Congrats too on completing the DSP-93 and  
>and testing it on the satellites. It will be interesting, in due course,  
>to hear how it is doing with the A0-13 400 bps PSK.  
One day I will upload a picture of my "studio". It will sure surprise you.  
Elegant simplicity but very careful control of light and colour temperature.

I will keep you posted of my progress Jan. I am currently engaged in writing a  
users manual for the DSP93 so that will keep me busy for some time. The  
qualifications are that I have made EVERY mistake in the book Hi. Without  
the help of Ron W5RKN the DSP93 would have been "thrown in the Bay"  
It is super performer, these pictures just zip up. I have never seen or  
experienced such fast uploads ever. The receive sensitivity is also very  
good. I access the satellites sooner and hang on longer. I have got a lot  
of testing to do with HF modems 1200 baud sats etc and of course A013  
telemetry. That will be delayed for a while .. I transmitted into the  
UEK2000SAT

by accident and had to send it back for repair. I was unable to fix it.  
I have come to  
the conclusion that A013 and pacsats are not compatible in my shack in that



you cant receive and transmit on the same rig without the possibility of error.  
I will buy a 2M to 10M converter and use my HF rig for AO-13 Mode S  
reception.

>This month is another busy one for me and I seem to be getting less and  
>less time to even think about all the things I want to do in amateur  
>radio :-)

I know what you mean Jan. It gets worse as you get older. Cecelia was  
commenting today that time was flying along and we are retired.!!

Take it easy.

73 in health

Syd VE3EGO  
@K0-23, K0-25,U0-22. AO-13 Modes B & S

QTH - Belleville, Ontario, Canada

Using the DSP93 unit. Another fine product from the folks at  
AMSAT - TAPR.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 3. Something Wrong?

From: STAM103W@WONDER.EM.CDC.GOV  
Date: Sat, 04 Mar 95 13:35:00 EST  
To: DSP-93@tapr.org  
Message-ID: <2F58346B@SmtplibOut.em.cdc.gov>  
Rendered body type: text/plain

FROM: Stampf, Charles E.  
TO: SMTP:DSP-93@tapr.org  
CC:  
SUBJECT: Something Wrong?  
DATE: 03-04-95 13:35 EST  
PRIORITY:

I havnt recd mail from this list in quite some time (over 1 week).  
I recently changed mailboxes and was wondering if I messed something up.  
I'm hoping to continue with the progress of the DSP-93 kit building  
project.  
Is this list still alive ???

---

### 4. Question

From: dhoward@tcet.unt.edu (Doug Howard)  
Date: Sat, 4 Mar 95 15:44:34 CST  
To: dsp-93@tapr.org  
Message-ID: <9503042144.AA145293@tcet.unt.edu>  
Rendered body type: text/plain

Hi, all.

Perhaps someone can comment on this question. If I am running the PKT  
modem on the DSP-93, shouldn't more LEDs illuminate than just the power  
LED (regardless of whether I have the radio connected)? Or perhaps I'm  
not reading the docs correctly.

Any help? Thanks in advance.

73s,  
Doug - KG5OA

---

### 5. Re: [DSP-93:440] Question

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 4 Mar 1995 16:54:45 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab7e9f100102100479dc@[204.96.0.139]>  
Rendered body type: text/plain

>Hi, all.  
>  
>Perhaps someone can comment on this question. If I am running the PKT  
>modem on the DSP-93, shouldn't more LEDs illuminate than just the power  
>LED (regardless of whether I have the radio connected)? Or perhaps I'm  
>not reading the docs correctly.  
>  
>Any help? Thanks in advance.  
>  
>73s,  
>Doug - KG50A

Yes - we have blinkin' lights.

When the PKT modem loads, LED2 lights briefly, then LED7 (half intensity)  
LED 3 is DCD and LED 5 is NOT DCD. LED 4 is PTT.

See the comments in the PKT.ASM file.

What version of the ROMs are you using. Current is 2.15.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 6. Re[2]: Question

From: dhoward@tcet.unt.edu (Doug Howard)  
Date: Sat, 4 Mar 95 17:29:35 CST  
To: dsp-93@tapr.org  
Message-ID: <9503042329.AA147118@tcet.unt.edu>  
Rendered body type: text/plain

Ron,

Thanks - that's the way I read it, too. Yes, N5BRG just sent me 2.15  
to replace 2.09. He sent along a new Xtal as well.

I got a new GAL (U113) back in about November and installed it, but I  
still don't know why a new one was required. Perhaps I need further GAL  
update(s)?

I guess I need to go back and run some of the checkout routines before I  
go much further.

Thanks for the info, Ron.

73s,  
Doug - KG50A

---

## 7. (no subject)

From: Les Davies <ve6ahm@ve6ahm-1.ampr.ab.ca>  
Date: Mon, 6 Mar 1995 11:21:49 -0700 (MST)  
To: dsp-93@tapr.org  
Message-ID: <199503061823.LAA02268@ve6ahm-1>  
Rendered body type: text/plain

It looks like the dsp-93 should work with Linux (unix). Anyone know if  
it runs under the doseulator or can be modified to run natively? If the  
source code is in C is it modifiable? Interests include all digital modes.  
Les  
..

---

## 8. Any New Build Updates

From: Carol Byers <crlbyers@garlic.com>  
Date: Sun, 5 Mar 1995 16:03:32 -0800 (PST)  
To: hardware dsp-93 <dsp-93@tapr.org>  
Message-ID: <Pine.A32.3.91.950305160105.11755A-100000@garlic.com>  
Rendered body type: text/plain

Well, finally I can get back to finishing the DSP-93. The latest update  
I have is dated 02 Feb 95. Is there anything later ?  
Carol, W9HGI

---

## 9. PacComm TNC Interface NB-96

From: Carol Byers <crlbyers@garlic.com>  
Date: Sun, 5 Mar 1995 16:14:22 -0800 (PST)

To: hardware dsp-93 <dsp-93@tapr.org>  
Message-ID: <Pine.A32.3.91.950305160356.11755B-100000@garlic.com>  
Rendered body type: text/plain

I've got an NB-96/Tiny TNC which is connected to the PK-1, and was wondering if any of dsp-93K group has interfaced it with the NB-96? There is an AUX disconnect header on the back of the NB-96, and it looks like it should work as it have all the signals but the PTT. The documentation I got from PacComm when I bought the units two an a half years ago is not very clear about the AUX header. It's right on the back of the NB-96, and looks like an easy way to go..

Carol, W9HGI

---

## 10. Re: [DSP-93:443]

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 6 Mar 1995 10:58:39 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab80eeec0002100411b2@[204.96.0.37]>  
Rendered body type: text/plain

>It looks like the dsp-93 should work with Linux (unix). Anyone know if  
>it runs under the doseimulator or can be modified to run natively? If the  
>source code is in C is it modifiable? Interests include all digital modes.  
>Les  
>.

There is a loader for the DSP software that runs under DOS. Other than that, all you need is a terminal emulator to talk to the DSP and software to talk to your TNC.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 11. Re: [DSP-93:444] Any New Build Updates

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 6 Mar 1995 11:01:32 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab80f02a010210045c34@[204.181.160.6]>  
Rendered body type: text/plain

>Well, finally I can get back to finishing the DSP-93. The latest update  
>I have is dated 02 Feb 95. Is there anything later ?  
>Carol, W9HGI

No that is the latest update.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 12. Operations Manual

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 6 Mar 1995 11:26:43 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab80f3f5020210044039@[204.181.160.6]>  
Rendered body type: text/plain

Thanks to VE3EGO, we now have a good start on an Operations Manual for the DSP-93. Unfortunately, Syd was the ONLY person to volunteer his time to start writing up the results of his experiences. So now at least we will have the beginings of an Operations Manual.

We still need more help. Specifically we still need the following:

How to connect the DSP-93 to your radio  
Icom - 9600 bps  
Icom - other  
Kenwood - 9600 bps  
Kenwood - other  
Yaesu - 9600 bps  
Yaesu - other  
Other - other (my favorite topic)

Specific instructions on each modem, filter, etc.

APT.DOC  
CW\_93.DOC  
HF\_93.DOC  
PSK.DOC  
PSK\_93T.DOC

Also we need someone using a Yaesu 736 to modify and test the software for TESTLEDS and the PSK modems.

Come on. Surely someone can volunteer!

You don't have to worry about editing, formatting, etc. We'll do that.

Let's here from y'all.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 13. Re: [DSP-93:448] Operations Manual

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 6 Mar 1995 12:39:15 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab81068e030210049eca@[204.181.160.6]>  
Rendered body type: text/plain

>  
>Also we need someone using a Yaesu 736 to modify and test the software for  
>TESTLEDS and the PSK modems.  
>  
I meant to say TESTPORT and the PSK modems.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 14. Re: [DSP93DEV:1112] File uploaded to ftp.tapr.org

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 06 Mar 1995 21:44:24 +0000  
To: dsp93dev@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9503062143.AA03959@camel.campbell.edu>  
Rendered body type: text/plain

Done! I moved it to ~tapr/dsp-93/UPDATES/BuildUpdate-2-Feb. It is now available via anonymous ftp to ftp.tapr.org.

I am sending a copy of this so the dsp-93 group is aware, too!

>Mark,  
>  
>I uploaded the Build Update "BuildUpdate-2-Feb" to the UPLOAD directory.  
>  
>Would you please move it to the UPDATE directory.  
>  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

### 15. Next Build

From: STAM103W@WONDER.EM.CDC.GOV  
Date: Mon, 06 Mar 95 20:27:00 EST  
To: DSP-93@tapr.org  
Message-ID: <2F5B3811@SmtipOut.em.cdc.gov>  
Rendered body type: text/plain

FROM: Stampf, Charles E.  
TO: SMTP:DSP-93@tapr.org  
CC:  
SUBJECT: Next Build  
DATE: 03-06-95 20:28 EST  
PRIORITY:

Can anybody provide the status of the next kit shipment? Here it is the end of the first week in March and I'm eagerly awaiting it's release.

I have not read nor received comments from this forum in the last couple weeks. Have there been any new developments, software or other juicy tidbits?

---

## 16. Re: [DSP-93:451] Next Build

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 6 Mar 1995 22:40:21 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503070440.WAA01701@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

Depending on the arrival of parts in the next 3 weeks - the production ship is scheduled for April 10-15th. This might slip slightly due to any parts problems that might arise.

At least we have all the trouble parts from last build, but then again trouble parts change from build to build.

Cheers - Greg, WD5IVD

According to STAM103W@WONDER.EM.CDC.GOV:

>  
> FROM: Stampf, Charles E.  
> TO: SMTP:DSP-93@tapr.org  
> CC:  
> SUBJECT: Next Build  
> DATE: 03-06-95 20:28 EST  
> PRIORITY:  
>  
> Can anybody provide the status of the next kit shipment? Here it is the  
> end of the first week in March and I'm eagerly awaiting it's release.  
>  
> I have not read nor received comments from this forum in the last couple  
> weeks. Have there been any new developments, software or other juicy  
> tidbits?  
>  
>  
>

---

## 17. FT-736R

From: teller@ix.netcom.com (Robert Teller)  
Date: Tue, 7 Mar 1995 17:42:18 -0800  
To: dsp-93@tapr.org  
Message-ID: <199503080142.RAA04074@ix4.ix.netcom.com>  
Rendered body type: text/plain

Hello Ron,

1. Have absolutely no idea if this will get to you.
2. How do I send messages to you?
3. 5th attempt to send message to you, all come back "unknown".
4. Would be willing to try to work on the TestPort and the other program if I know I can get help with what you want/need.
5. WE NEED A FAQ FOR USING THIS FORUM... I totally new to internet and having a very tough time with it...
6. Let me know if this is ok

Thanks for the time...

Bob, AA70G  
teller@ix.netcom.com

## 18. Re: [DSP-93:453] FT-736R

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 7 Mar 1995 22:06:31 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab82dd0701021004c15b@[204.96.0.39]>  
Rendered body type: text/plain

>Hello Ron,  
>  
>1. Have absolutely no idea if this will get to you.

It did.

>2. How do I send messages to you?

w5rkn@amsat.org

>3. 5th attempt to send message to you, all come back "unknown".

What address were they sent to?

>4. Would be willing to try to work on the TestPort and the other  
>program if I know I can get help with what you want/need.

The line forms here. Advice is free (and worth every penny).

>5. WE NEED A FAQ FOR USING THIS FORUM... I totally new to internet and  
>having a very tough time with it...

Just send e-mail to dsp-93@tapr.org and await your reply.

>6. Let me know if this is ok

Go for it.

>Thanks for the time...  
>

>Bob, AA70G  
>teller@ix.netcom.com

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 19. info from in3dyg

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 8 Mar 1995 06:56:05 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab8359b4010210040c93@[204.96.0.39]>  
Rendered body type: text/plain

>Date: Wed, 8 Mar 1995 12:24:39 +0100  
>From: matem@ipv36.unipv.it (dip. Matematica- Rossella)  
>To: w5rkn@amsat.org  
>Subject: info  
>Status:  
>  
>hello Ron,  
>  
>this message for info of the dsp-93 now work all-mode.The performance is  
>  
>not excetional, but i use a old-tnc2 with low clock.  
>  
>About the doc-build i will be happy to do something,but my english is very  
>  
>poor.For your info from 20 of march and from 15 days i will be active from  
>  
>Uganda,in hf, with the call 5x4d.A particular eye for dspers.....  
>  
>I work in my freetime in a volunteer association sided in many parts of  
>  
>Africa.That's the story.Many 73 and tnx again for the your help during the  
>  
>93-build.Looking for tnc-95.  
>  
>Ciao from dolomite mountains      Franco      in3dyg  
>  
>

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 20. ac volts to pep

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 08 Mar 1995 17:02:52 +0000  
To: dsp-93@tapr.org, rparsons@bga.com (Ronald G. Parsons)  
Message-ID: <9503081702.AA14362@camel.campbell.edu>  
Rendered body type: text/plain

Ron,

Can you me tell the formula used to convert an AC voltage reading from a voltmeter to a close p.e.p voltage? I remember something about 1.414...is it:

volts AC x 1.414 = volts pep?

Thanks.....

Mark L. Hammond [KC4EBR]

---

## 21. Missing Box

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Wed, 8 Mar 1995 11:55:51 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503081755.LAA08602@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

As many of you know, I had a box checked on my flight to St Louis which was lost. This box contained the books and disk which we planned to distribute at the workshop. The box is still missing. The plan is to reprint the books and remake the disk and then get them in the mail to the people that paid to attend the workshop. Sorry but this material will only be mailed to workshop attendees at this time. TAPR may make it available at a later date.

American called me today and I think they have given up hope of finding the box. So I plan to get the material remade and distributed by mail in 7 to 10 days.

Sorry for the delay.

Bob Stricklin, N5BRG

---

## 22. Re: [DSP-93:457] Missing Box

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 08 Mar 1995 18:25:02 +0000  
To: dsp-93@tapr.org  
Message-ID: <9503081824.AA15102@camel.campbell.edu>  
Rendered body type: text/plain

With the names on the front of the DSP-93s, literature, etc., one might hope that whoever ends up with the box might call TAPR or AMSAT....sorry to hear about your mishap.

>As many of you know, I had a box checked on my flight to St Louis which was  
>lost. This box contained the books and disk which we planned to distribute  
>at the workshop. The box is still missing. The plan is to reprint the books  
>and remake the disk and then get them in the mail to the people that paid to  
>attend the workshop. Sorry but this material will only be mailed to workshop  
>attendees at this time. TAPR may make it available at a later date.

>  
>American called me today and I think they have given up hope of finding the  
>box. So I plan to get the material remade and distributed by mail in 7 to 10  
>days.

>  
>Sorry for the delay.

>  
>Bob Stricklin, N5BRG

>  
>  
>

Mark L. Hammond [KC4EBR]

### 23. Re: [DSP-93:457] Missing Box

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)  
Date: Wed, 8 Mar 1995 12:34:03 -0600  
To: dsp-93@tapr.org  
Message-ID: <95Mar8.123413cst.20586@janus01.aud.alcatel.com>  
Rendered body type: text/plain

> American called me today and I think they have given up hope of finding the  
> box. So I plan to get the material remade and distributed by mail in 7 to 10  
> days.  
>  
> Sorry for the delay.  
>  
> Bob Stricklin, N5BRG  
>  
>

Bob did a great job with the workshop at the TAPR meeting, what a shame not to be able to hand out the slides, after all the work that he put into them. Thanks also to Roy, who rescued us with his unit!

- Tom, N5EG

---

### 24. Re: [DSP-93:458] Re: Missing Box

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 8 Mar 1995 14:55:57 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503082056.0AA17542@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

According to Mark L. Hammond:

>  
> With the names on the front of the DSP-93s, literature, etc., one might hope  
> that whoever ends up with the box might call TAPR or AMSAT....sorry to hear  
> about your mishap.

We kept cracking a joke that someone somewhere was trying to figure out how to hookup the DSP-93 units to their cable tv box :-)

Greg

---

### 25. Re: Missing Box

From: Bob Winingham@acd.org (Bob Winingham)  
Date: 08 Mar 1995 16:07:40 GMT  
To: dsp-93@tapr.org  
Message-ID: <933879.6657691@acd.org>  
Rendered body type: text/plain

Sorry that happened :  
Did you have American check the Denver Airport :-)

-----  
As one who could not get away for the meetings I would like to know how it went.  
Could we have a small report on what went on at the meetings.?

GIF files of the slides optional.

BOB KC5EJK

---

### 26. Re: [DSP-93:456] ac volts to pep

From: Dave Creek <dcreek@pixi.com>  
Date: Wed, 8 Mar 1995 14:30:34 -1000 (HST)  
To: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.PCW.3.91.950308141756.6783A-100000@dip022.pixi.com>  
Rendered body type: text/plain

On Wed, 8 Mar 1995, Mark L. Hammond wrote:

> Date: Wed, 8 Mar 1995 11:10:35 -0600  
> From: Mark L. Hammond <hammond@camel.campbell.edu>  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:456] ac volts to pep  
>  
> Ron,  
>  
> Can you me tell the formula used to convert an AC voltage reading from a  
> voltmeter to a close p.e.p voltage? I remember something about 1.414...is  
> it:



>  
> volts AC x 1.414 = volts pep?  
>  
> Thanks.....

The formulas are:

Volts(Peak) = Volts(RMS) X 1.414 [From 0 to one peak, usually assumed  
to be positive]

Volts (Peak to Peak) = Volts(RMS) X 2.828 [From positive peak to  
negative peak like you see on  
an O'scope.]

Another good formula is:

Volts(RMS) = Volts(Peak to peak) X .354

When the instructions read set the signal to 1.0 Volts peak to peak on  
your oscilloscope and all you have is a digital multimeter with true RMS  
readings, this will get you going and may be more accurate than a scope.

Hope this helps,

Dave Creek, NH6BA  
Ewa Beach, HI  
dcreek@pixi.com

---

## 27. Re: [DSP-93:460] Re: Missing Box

From: Roy Welch <rdw@crl.com>  
Date: Wed, 8 Mar 1995 16:59:49 -0800 (PST)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950308165129.14831B-100000@crl6.crl.com>  
Rendered body type: text/plain

On Wed, 8 Mar 1995, Greg Jones wrote:

> According to Mark L. Hammond:  
> >  
> > With the names on the front of the DSP-93s, literature, etc., one might hope  
> > that whoever ends up with the box might call TAPR or AMSAT....sorry to hear  
> > about your mishap.  
>  
> We kept cracking a joke that someone somewhere was trying to figure out how  
> to hookup the DSP-93 units to their cable tv box :-)  
>  
> Greg

Perhaps we need the following on the box:

!AHTUNG!

Das machinen is nicht fur gerfingerpoken  
und mittengrabben. Ist easy schnappen der  
springenwerk, blowenfusen und poppencorken  
mit spitzensparken. Ist nicht fur gewerken by  
das dummkopffen. Das rubbernecken sightseeren  
keepen hands in das pockets. Relaxen und  
watch das blinkenlights.

---

## 28. WiSP Programs Menu

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 8 Mar 1995 20:21:05 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab84136f01021004ae01@[204.96.0.43]>  
Rendered body type: text/plain

Roy,

I assume it is OK to use the following in the Operations Manual.

Ron

=====

To load the DSP-93 modems from WiSP, do the following:

1. Add FSKP1 (for example) in the Programs menu in WiSP.  
The Menu Title is your choice, e.g., "FSKP1".  
The Startup Directory is, e.g., "C:\DSP93\OBJ".  
The Program Name is, e.g., "FSKP1.PIF".
2. Create the FSKP1.PIF file which has the program to be run as C:\DSP93\OBJ\DSPLoad.EXE. It has the current directory as C:\DSP93\OBJ. In the Other Parameters field, enter FSKP1 (no extension). The info in the parameters field is added as a command line entry so that it is treated as though "DSPLoad FSKP1" had been entered.
3. Don't need a batch file.
4. Be sure that FSKP1.PIF and DSPLoad.EXE are in directories in the PATH statement.

Works fine every time.

73, Roy W0SL

=====

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 29. Re: [DSP-93:464] WiSP Programs Menu

From: Roy Welch <rdw@crl.com>  
Date: Wed, 8 Mar 1995 21:33:44 -0800 (PST)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950308213318.24524A-100000@crl8.crl.com>  
Rendered body type: text/plain

On Wed, 8 Mar 1995, Ronald G. Parsons wrote:

> Roy,  
>  
> I assume it is OK to use the following in the Operations Manual.  
>  
> Ron

Yes, by all means.  
73, Roy

>  
> =====  
>  
> To load the DSP-93 modems from WiSP, do the following:  
>  
> 1. Add FSKP1 (for example) in the Programs menu in WiSP.  
> The Menu Title is your choice, e.g., "FSKP1".  
> The Startup Directory is, e.g., "C:\DSP93\OBJ".  
> The Program Name is, e.g., "FSKP1.PIF".  
>  
> 2. Create the FSKP1.PIF file which has the program to be run as  
> C:\DSP93\OBJ\DSPLoad.EXE. It has the current directory as C:\DSP93\OBJ.  
> In the Other Parameters field, enter FSKP1 (no extension). The info  
> in the parameters field is added as a command line entry so that it is  
> treated as though "DSPLoad FSKP1" had been entered.  
>  
> 3. Don't need a batch file.  
>  
> 4. Be sure that FSKP1.PIF and DSPLoad.EXE are in directories in the PATH  
> statement.  
>  
> Works fine every time.  
>  
> 73, Roy W0SL  
>  
> =====  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org

>  
>  
>

---

### 30. Re: Updated Schematics

From: "Bent Bagger" <bb@craycom.dk>  
Date: Wed, 8 Mar 1995 11:24:52 GMT+1  
To: dsp-93@tapr.org  
Message-ID: <635E793106@rd.craycom.dk>  
Rendered body type: text/plain

I have just downloaded the updated schematic diagrams from ftp.tapr.org and they came out beautifully when printed and enlarged to A3 format.

The only snag was that the note at the bottom of sheet 3 of the AIO was cropped due to the difference in paper format (A4 = 210\*297 mm vs. 8.5 by 11 inches), but I was able to find the text in the postscript file, so it didn't matter.

Thanks.

Best 73 de Bent/OZ6BL

---

### 31. Comments and questions from K6OYY

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 9 Mar 1995 08:24:54 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab84bfa6000210042453@[204.96.0.43]>  
Rendered body type: text/plain

Jim asks some questions that I don't know the answer to (especially the Windows problems). Thought I'd repost here.

Via K0-23

From: K6OYY  
To: W5RKN  
Subject: Kit Update & Comments  
Keywords:

-----  
To : W5RKN  
From: K6OYY  
Time: 074746UTC  
Date: 08 Mar 1995  
-----

Hello Ron,

I assume the text you sent was the content of the readme file....thanks.

I had no problem installing the software previously, but thought the readme might have had some additional test, etc. info.

Some general comments on the kit:

My unit is up and running well, based on the tests in the manual. I have not had time to consider an interface yet, I have a spare TNC-2 clone (MFJ 1270) that I could use.

I noted the PCTOR application was included, does it provide DSP application code to implement Pactor or is it just a terminal program optimized for that mode ?

I have a few minor problems with the D93WE software, I can download the .obj files without problem, but have trouble calling the test equipment routines using their pull-down menu's.....getting a "can't access file" message. Checked path and directory spec in setup but problem is elsewhere. The oscilloscope and analyzer will both load, scope looks like it works (ignoring can't access alarm), function gen does not display control screen at all. All the "testXXX.obj" files seem to work.

Sometimes after download to the DSP93, I get a "\*G" message on screen after initialization.....is this normal ?

I've also noted a few GP Faults, which may mean I need to do some additional memory management (that was a surprise, as I

load most of my resident stuff high and have over 615k of conventional memory --8 MB total). Looked as if D93WE was trying to access addresses already occupied by D93WE (based on GPF error message).

I used a different approach in final assembly of the spacers and interconnectors. After finishing board 2, I bolted the two units together using the spacers supplied, and then inserted the long pin interconnectors firmly into the mating counterparts on board 1. Then tack soldered the board 2 connectors into place, which resulted in perfect spacer alignment, etc. I'm sure someone else has likely done this also, as it obviates the need to shim the spacers or be concerned about putting board 2 under too much tension when attaching same.

Great job on the assembly manual and mechanical tolerances in case/board assembly !! I spent more time packaging my Trakbox than in assembly of the pboard.....and was pleased not to have that task with the DSP-93 ! (Build time was two full days).

Looking forward to the Ops Manual in progress up North.....I may have some time around middle of April and could perhaps help with additional writing at that time if still needed. One thing that would have been nice to have is a descriptive list of the applications included.....not sure exactly what I have without reading each .doc file in detail.

Nice job on a complicated piece of hardware, congratulations to you and the team !

73, JIM K60YY in Santa Barbara

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 32. Re: [DSP-93:465] Re: WiSP Programs Menu

From: Roy Welch <rdw@crl.com>  
Date: Thu, 9 Mar 1995 07:34:40 -0800 (PST)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950309072625.2546A-100000@crl6.crl.com>  
Rendered body type: text/plain

CORRECTION!!!!

On Wed, 8 Mar 1995, Roy Welch wrote:

```
>
>
> On Wed, 8 Mar 1995, Ronald G. Parsons wrote:
>
> > Roy,
> >
> > I assume it is OK to use the following in the Operations Manual.
> >
> > Ron
>
> Yes, by all means.
> 73, Roy
>
>
> >
> > =====
> >
> > To load the DSP-93 modems from WiSP, do the following:
> >
> > 1. Add FSKP1 (for example) in the Programs menu in WiSP.
> > The Menu Title is your choice, e.g., "FSKP1".
```

OK down to here.

```
> > The Startup Directory is, e.g., "C:\DSP93\OBJ".
```

The above line should be e.g. "C:\WISP." That is where the PIF file is.

> > The Program Name is, e.g., "FSKP1.PIF".

The above line should be e.g. "C:\WISP\FSKP1.PIF." just to be safe.

> > 2. Create the FSKP1.PIF file which has the program to be run as  
> > C:\DSP93\OBJ\DSPLOAD.EXE. It has the startup directory as C:\DSP93\OBJ.  
> > In the Other Parameters field, enter FSKP1 (no extension). The info  
> > in the parameters field is added as a command line entry so that it is  
> > treated as though "DSPLOAD FSKP1" had been entered.  
> >  
> > 3. Don't need a batch file.  
> >  
> > 4. Be sure that FSKP1.PIF and DSPLOAD.EXE are in directories in the PATH  
> > statement.  
> >  
> > Works fine every time.  
> >  
> > 73, Roy W0SL  
> >  
> > =====  
> >  
> > Ron W5RKN  
> >  
> > also:  
> > w5rkn@amsat.org

In other words WiSP points to and runs the PIF file. The PIF file points to and runs DSPLOAD with the FSKP1 command line parameter. The reason for the PIF file is so Windows can administer the sharing of resources in the PC to avoid conflict errors.

Sorry I missed the above the first time. I thought I had it right in my original message.

73, Roy

---

### 33. Re: [DSP-93:468] Re: WiSP Programs Menu

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 9 Mar 1995 10:06:40 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab84d7ab05021004c8e1@[204.181.160.10]>  
Rendered body type: text/plain  
>CORRECTION!!!!

Thanks. I munged it to suit my taste. Guess my taster need improvement.

New version follows:

=====

To load the DSP-93 modems from WiSP, do the following:

1. Add FSKP1 (for example) in the Programs menu in WiSP.  
The Menu Title is your choice, e.g., "FSKP1".  
The Startup Directory is, e.g., "C:\WISP". I.e. where the PIF is.  
The Program Name is, e.g., "C:\WISP\FSKP1.PIF".
2. Create the FSKP1.PIF file which has the program to be run as  
C:\DSP93\OBJ\DSPLOAD.EXE. It has the current directory as C:\DSP93\OBJ.  
In the Other Parameters field, enter FSKP1 (no extension). The info  
in the parameters field is added as a command line entry so that it is  
treated as though "DSPLOAD FSKP1" had been entered.
3. Don't need a batch file.
4. Be sure that FSKP1.PIF and DSPLOAD.EXE are in directories in the PATH  
statement.

Works fine every time.

73, Roy W0SL  
=====

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 34. Re: DSP-93 PROBLEMS

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 9 Mar 1995 14:36:06 -0600  
To: john.bandy@twsubbs.twsu.edu (JOHN BANDY)  
Cc: dsp-93@tapr.org  
Message-ID: <ab850c0001021004149f@[204.181.160.13]>  
Rendered body type: text/plain

John,

>To make a long story short I removed the slot fax modem and set the  
>jumper back to COM2 as it was when brand new. Using PaKet the computer  
>and DSP-93 are talking fine and I was able to run Tests 1, 2, 3, & 4  
>successfully. Using MicroLink phone commo software the computer and  
>DSP-93 were talking fine but after the first 2 lines every other  
>character was skipped and eventually the message "RECEIVE OVERRUN ERROR"  
>displayed. My internal 2400 baud non-fax modem is working fine also.

Looks like the computer/software combo is not fast enough to keep up with the 19.2 kbs of the DSP-93.

Perhaps someone can write a program to change the baud rate of the DSP-93. You could download it after every reset. Not convenient, but what ever it takes...

This would make an interesting project for an interested DSP-93 user (I guess assigning problems is the old professor coming out of me).

>Would you prefer that I use w5rkn@amsat.org over rparsons@bga.com? I  
>do not know the differences.

Actually, you should send messages to dsp-93@tapr.org so everyone on the list is informed and could possibly help.

>Thanks again for your help, Ron. I'm also grateful for Dorothy, Bob,  
>Roy and Greg's help.

You are welcome.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 35. Re: Comments and questions from K6OYY

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)  
Date: Thu, 9 Mar 1995 18:12:53 -0600  
To: dsp-93@tapr.org  
Message-ID: <95Mar9.181311cst.20514@janus01.aud.alcatel.com>  
Rendered body type: text/plain

Ron: perhaps you can forward this reply to K6OYY.

1. Which version of Windows are you using? D93WE was compiled for version 3.1
2. How is your mouse connected? D93WE uses the serial com port to talk to the DSP93, this can conflict with a mouse driver that is trying to use the com port also.
3. The .EXE file for D93WE is about 450k, and much of that is a .DLL. So, D93WE should be happy with 600k+ of memory in your computer.
4. Which version of DOS are you running? OWL is not happy with pre-5.0 version.
5. If you are getting GPF's, then other functions within D93WE may not work properly.

- Tom, N5EG

---

## 36. Re: [DSP-93:471] Re: Comments and questions from K6OYY

From: ljs@rain.org (L.J.Shepherd)  
Date: Thu, 09 Mar 1995 23:49:02 -0800  
To: dsp-93@tapr.org

Message-ID: <199503100744.XAA09972@coyote.rain.org>

Rendered body type: text/plain

Thanks for your response, my answers follow below:

> Ron: perhaps you can forward this reply to K6OYY.  
>  
>1. Which version of Windows are you using? D93WE was compiled for version 3.1  
--- I'm running V3.1 ---  
  
>2. How is your mouse connected? D93WE uses the serial com port to talk  
>to the DSP93, this can conflict with a mouse driver that is trying to use  
>the com port also.  
  
--- Mouse is on COM2, DSP-93 is on COM1, both ports have  
16550AFN UART, separate IRQ's (standard) ---  
>  
>3. The .EXE file for D93WE is about 450k, and much of that is a .DLL. So,  
>D93WE should be happy with 600k+ of memory in your computer.  
  
--- OK.....I will run MEM/c/p after loading D93WE and check ---  
>4. Which version of DOS are you running? OWL is not happy with pre-5.0  
>version.  
  
--- Running 6.22 here ---  
>  
>5. If you are getting GPF's, then other functions within D93WE may not work  
>properly.  
  
--- Yes, failure of some functions is associated with GPF ---  
> - Tom, N5EG  
>  
  
--- I remember something earlier in this SIG about loading the .obj  
files into the WINDOWS subdirectory or some other DSP93 directory. I have  
not tried that yet.....my path (c:\dsp\dsp93) appears in autoexec.bat.....  
do I need to copy the .obj's to some other directory in order to get the  
pull-downs for INSTRUMENTS, etc to work ?? They are currently in OBJ  
directory .....disk software installation was straightforward and simple.  
  
Do you have any comment regarding the " \*G " that appears after downloading  
some of the .obj files and completion of initialization.  
  
Thanks again for your assistance !

73, Jim K6OYY

---

### 37. Re: [DSP-93:458] Re: Missing Box

From: "Jim Lynch" <k4gvo@america.net>

Date: Fri, 10 Mar 1995 05:34:58 -0500

To: dsp-93@tapr.org

Message-ID: <199503101041.KAA06207@america.net>

Rendered body type: text/plain

> With the names on the front of the DSP-93s, literature, etc., one might hope  
> that whoever ends up with the box might call TAPR or AMSAT....sorry to hear  
> about your mishap.  
>  
> Mark L. Hammond [KC4EBR]

Mark

You're assuming of course that it was really lost. I suspect that  
"stolen" is a more accurate description of the problem. I'm sure a  
pawn shop is now wondering what to advertize those things as. A  
pity, for sure.

Bob,

Thanks a lot for all the extra effort this will entail. I'm sure we  
all appreciate your efforts, past and future.

Jim K4gvo (I've noticed that a bunch of us on this list have really  
odd last names!)

Jim Lynch Fayetteville Ga K4GV0  
'86 GL1200I k4gvo@america.net

---

### 38. Re: Comments and questions from K6OYY

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)  
Date: Fri, 10 Mar 1995 07:39:55 -0600  
To: dsp-93@tapr.org  
Message-ID: <95Mar10.074018cst.20489@janus01.aud.alcatel.com>  
Rendered body type: text/plain

> --- I remember something earlier in this SIG about loading the .obj  
> files into the WINDOWS subdirectory or some other DSP93 directory. I have  
> not tried that yet.....my path (c:\dsp\dsp93) appears in autoexec.bat.....  
> do I need to copy the .obj's to some other directory in order to get the  
> pull downs for INSTRUMENTS, etc to work ?? They are currently in OBJ  
> directory .....disk software installation was straightforward and simple.  
>  
> Do you have any comment regarding the " \*G " that appears after downloading  
> some of the .obj files and completion of initialization.  
>  
> Thanks again for your assistance !  
>  
> 73, Jim K6OYY  
>

Jim: the instruments must be in the directory specified in the  
D93WE.INI file. Look at the supplied D93WE.INI file, or read the on-line help  
on how to set it up. It sounds like you have changed the directory structure  
from the default supplied on the distribution disks, and this may be related  
to the problems.

The \*G is an echo-back from the DSP93 of the windows program loading  
the object code to the DSP93 and then telling it to Go (G monitor command).

I have had no other reports of GPF's on machines. Incidentally, you  
must have 386-enhanced mode enabled in Windows.

- Tom, N5EG

---

### 39. Re: [DSP-93:472] Re: Comments and questions from K6OYY

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 10 Mar 1995 14:21:02 +0000  
To: dsp-93@tapr.org  
Message-ID: <9503101421.AA26402@camel.campbell.edu>  
Rendered body type: text/plain

Jim,

If you did the installation of the distribution diskettes as instructed, I  
think you should have ended up with everything under

c:\dsp93

You appear to be one level deeper in your subdirectory structure. I'm not  
sure, but that might be the problem with locating files when loading the  
.obj files.

As far as the comport conflict, have you double checked to make sure that  
the D93WE.INI files reflects the correct comport of your DSP unit? The  
default in the distributed file assumes you have the DSP93 on comport 1.

How about the path statements in D93WE.INI to match your \dsp\dsp93  
directory structure?

These are just some simple things that you probably have checked, but I  
thought them worth mentioning.

>  
> --- I remember something earlier in this SIG about loading the .obj  
> files into the WINDOWS subdirectory or some other DSP93 directory. I have  
> not tried that yet.....my path (c:\dsp\dsp93) appears in autoexec.bat.....  
> do I need to copy the .obj's to some other directory in order to get the  
> pull downs for INSTRUMENTS, etc to work ?? They are currently in OBJ  
> directory .....disk software installation was straightforward and simple.  
>  
> Do you have any comment regarding the " \*G " that appears after downloading  
> some of the .obj files and completion of initialization.  
>  
> Thanks again for your assistance !  
>  
> 73, Jim K6OYY  
>  
>  
>



#### 40. Re: [DSP-93:472] Re: Comments and questions from K6OYY

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 10 Mar 1995 08:44:17 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab85fd7303021004cf29@[204.181.160.13]>  
Rendered body type: text/plain

> --- I remember something earlier in this SIG about loading the .obj  
> files into the WINDOWS subdirectory or some other DSP93 directory. I have  
> not tried that yet.....my path (c:\dsp\dsp93) appears in autoexec.bat.....  
> do I need to copy the .obj's to some other directory in order to get the  
> pull-downs for INSTRUMENTS, etc to work ?? They are currently in OBJ  
> directory .....disk software installation was straightforward and simple.  
>  
> Do you have any comment regarding the " \*G " that appears after downloading  
> some of the .obj files and completion of initialization.  
>  
> Thanks again for your assistance !  
>  
> 73, Jim K6OYY

I doesn't matter what directory the .OBJ files are in. The DOS PATH doesn't  
matter for them. You need a path to DSPLOAD if you use it, but I have  
loaded object files from all sorts of directories.

The \*G you may see while loading is due to the sequence used by the loaders:

R (resets the DSP-93)  
H (sends the high)  
L (sends the low) (can't remember if L or H comes first)  
G (executes the object file)

Ron W5RKN

also:  
w5rkn@amsat.org

---

#### 41. Yaesu 736 users

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 10 Mar 1995 14:25:00 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab866595000210041104@[204.181.160.25]>  
Rendered body type: text/plain

Could someone supply something like the following for your Yaesu 736,  
please, for the Operations Manual. The following is based on Icom format by  
Roy W0SL.

Thanks, Ron

IC-970  
MODIFICATION FOR SATELLITE PACKET OPERATION  
AND INTERFACE TO THE DSP-93  
Ron -- W5RKN

Here is the way I cabled out the IC-970 rig for 1200 bps and 9600 bps. The  
DATA and ACC(1) are the sockets on the rear of the set. BE CAREFUL OF DATA  
PIN 13 AND ACC(1) PIN 7. They carry 13.8 volts and can damage things if  
accidentally shorted to other pins!

By the way it will be necessary to disable the beep tone that occurs when  
you depress a key on the IC-970. The beep tone is sent through the speaker  
system and will interfere with the 1200 bps data signal otherwise. The beep  
tone is disabled by turning power OFF; then while pushing [FUNCTION] and  
[.] (MHz), turn power ON. See Section 15, p41 of the users instruction  
manual.

In my IC-970, I have also changed out FL13 and FL14 15kHz filters in the  
MAIN and SUB bands for wider filters. I changed out these filters for  
Murata SFH455-D 20 kHz Gaussian shape filters designed for data reception.  
The S-Meter must be recalibrated if you want it to read correctly with this  
filter. It reads low.

I cabled from the IC-970 DATA connector for 1200 bps and from the IC-970 ACC(1) connector for 9600 bps operation. See my writeup in the file 9600MODS.ZIP for information on modifying the IC-970 for 9600 bps operation.

CABLE PINOUTS  
DSP-93 TO IC-970  
FOR 9600 BPS OPERATION

| FUNCTION  | DSP-93 RADIO PORT | IC-970 ACC(1)              |
|-----------|-------------------|----------------------------|
| TX AUDIO  | 5                 | TX mod input               |
| GROUND    | 6                 | 2                          |
| PTT       | 2                 | 3                          |
| RCV AUDIO | 8                 | RX output (See note below) |

\* TX mod input at collector of Q59 on the main unit. This is available at the top of R60 with a micro clip. Ground is at the top of R51 with a micro clip. These resistors are about 3" back from the front of the Main unit and 2" from the right. The micro clips were attached to a length of RG-174 mini coax. No mods to board! The leads of the resistors appear to be painted. Scrape the paint off with a small, sharp knife (a small mod).

\* RX Main output at TSAOM (MAIN) at J29 (main unit). Available on P85 (tone squelch option socket) under the top cover.

\* RX Sub output at TSAOS (SUB) at J9 (main unit). Available on P87 (tone squelch option socket) under the top cover.

Note: An external switch must be provided to choose between MAIN of SUB band audio from the IC-970 depending on the choice of simplex (MAIN) or cross-band (SUB) operation.

DIN PLUG PIN LOCATIONS  
AS SEEN FROM BACK OF PLUG

| DSP-93 RADIO PORT | IC-970 ACC(1) PORT |
|-------------------|--------------------|
| 8 7 6             | 7 6                |
| 5 4 3             | 3 8 1              |
| 2 1               | 5 4                |
|                   | 2                  |

CABLE PINOUTS  
DSP-93 TO IC-970  
FOR 1200 BPS OPERATION

| FUNCTION  | DSP-93 RADIO PORT    | IC-970 DATA       |
|-----------|----------------------|-------------------|
| UP/DOWN   | 1                    | 8 #               |
|           | 7 (through 470 ohms) | 8 #               |
| GROUND    | 6                    | 2                 |
|           | 6                    | 9                 |
| PTT       | 2                    | 7                 |
| TX AUDIO  | 5                    | 1                 |
| RCV AUDIO | 8                    | 5 (for MAIN band) |
|           | 8                    | 10 (for SUB band) |
|           |                      | (See note below)  |

Note: An external switch must be provided to choose between MAIN of SUB band audio from the IC-970 depending on the choice of simplex (MAIN) or cross-band (SUB) operation.

DIN PLUG PIN LOCATIONS  
AS SEEN FROM BACK OF PLUG

| DSP-93 RADIO PORT | IC-970 DATA PORT |
|-------------------|------------------|
| 8 7 6             | 4 3 2 1          |
| 5 4 3             | 8 7 6 5          |
| 2 1               | 12 11 10 9       |
|                   | 13               |

# See "Note to users of Icom transceivers" in the DSP-93 Assembly Manual.

DSP-93 Radio Port pin 1 (Freq Down) ----/\ /\ /\ ----  
470 ohm | Icom up/down  
| ---line on mic  
| or DATA  
DSP-93 Radio Port pin 7 (Freq Up) -----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 42. Re: [DSP-93:477] Yaesu 736 users

From: Carol Byers <crlbyers@garlic.com>  
Date: Fri, 10 Mar 1995 15:46:47 -0800 (PST)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950310154312.44637A-100000@garlic.com>  
Rendered body type: text/plain

Hi Ron,

When I get that far I'll do it. Last monday got the boards connected and am going through the software tests. No trouble so far, fingers x'd. Am up to the first ramp test, and will try to interface to my N-96/pkt-1 PacComm stuff...will write it up too.

Carol

---

## 43. Re: [DSP-93:478] Re: Yaesu 736 users

From: rdavis@qualcomm.com (Roy Davis)  
Date: Fri, 10 Mar 1995 18:18:02 -0800  
To: dsp-93@tapr.org  
Message-ID: <199503110221.SAA05687@qualcomm.com>  
Rendered body type: text/plain

I also intend on interfacing to an FT-736, as soon as I find a TNC to hook up. All of mine already have other modems plugged in. Could use a TNC-95!

BTW, the interchange on here was very valuable. Put the thing together according to the instructions plus the windage from the discussion here, and it worked on the first try, at least for all the test programs.

Roy Davis  
WB9RKN

---

## 44. PaKet to/from DSP-93

From: john.bandy@twsubbs.twsu.edu (JOHN BANDY)  
Date: Fri, 10 Mar 95 20:29:00 -0600  
To: DSP-93@TAPR.ORG  
Message-ID: <8A534CD.019A013BC6.uuout@twsubbs.twsu.edu>  
Rendered body type: text/plain

I can get the PaKet to talk to the DSP-93 if I can get them started. Is PaKet trying to send the Date-Time to the modem and it doesn't like it? Occasionally, I can get some noise sent to the modem and I start getting asterisks. Do I need to create a connect file?

73'S JOHN W0UT

---

□ OLX 2.1 TD □ HAS ANYONE SEEN MY cAPSLock KEY?

-----  
The Wichita State University BBS (316)-689-3779 Wichita Ks ,USENET:  
Execnet:Fringenet:Internet:Ilinc:Intelec:MLPnet:P&Bnet:Smartnet:U'NI-net  
-----

---

## 45. Re: [DSP-93:480] PaKet to/from DSP-93

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 11 Mar 1995 09:34:15 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab87713a02021004f2c7@[204.181.160.8]>  
Rendered body type: text/plain

>I can get the PaKet to talk to the DSP-93 if I can get them started.  
>Is PaKet trying to send the Date-Time to the modem and it doesn't

```
>like it? Occasionally, I can get some noise sent to the modem and I
>start getting asterisks. Do I need to create a connect file?
>
>73'S JOHN W0UT
>---
> OLX 2.1 TD HAS ANYONE SEEN MY cAPSLOCK KEY?
>
>-----
> The Wichita State University BBS (316)-689-3779 Wichita Ks ,USENET:
>Execnet:Fringenet:Internet:Ilink:Intelec:MLPnet:P&Bnet:Smartnet:U'NI-net
>-----
```

Don't know what PaKet does but it is probably set up to talk to a TNC.

Do you have a plain terminal emulator that you can use, Then you won't have to worry about TNC commands.

Don't forget, you need one serial connection to the DSP-93 and another, perhaps through an A-B switch, to your TNC.

How do you have things connected. What TNC are you using?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 46. Re: [DSP-93:474] Re: Comments and questions from K6OYY

From: ljs@rain.org (L.J.Shepherd)  
Date: Sat, 11 Mar 1995 09:15:10 -0800  
To: dsp-93@tapr.org  
Message-ID: <199503111711.JAA12593@coyote.rain.org>  
Rendered body type: text/plain

Hi Tom: Thanks for your comments.....the directory structure is the default supplied, and I am running in the enhanced mode. I will have a look at the .ini file and see if that provides a clue. More later, I have to take a bit of time off here and go out and cut up a tree that has fallen in our yard from the storm that hit last night ! From keyboards to chainsaws .....  
thanks again, Jim.

```
>> --- I remember something earlier in this SIG about loading the .obj
>> files into the WINDOWS subdirectory or some other DSP93 directory. I have
>> not tried that yet.....my path (c:\dsp\dsp93) appears in
>> autoexec.bat.....
>> do I need to copy the .obj's to some other directory in order to get the
>> pulldowns for INSTRUMENTS, etc to work ?? They are currently in OBJ
>> directory disk software installation was straightforward and simple.
>>
>> Do you have any comment regarding the " *G " that appears after downloading
>> some of the .obj files and completion of initialization.
>>
>> Thanks again for your assistance !
>>
>> 73, Jim K6OYY
>>
>
> Jim: the instruments must be in the directory specified in the
>D93WE.INI file. Look at the supplied D93WE.INI file, or read the on-line help
>on how to set it up. It sounds like you have changed the directory structure
>from the default supplied on the distribution disks, and this may be related
>to the problems.
>
> The *G is an echo-back from the DSP93 of the windows program loading
>the object code to the DSP93 and then telling it to Go (G monitor command).
>
> I have had no other reports of GPF's on machines. Incidentally, you
>must have 386-enhanced mode enabled in Windows.
>
> - Tom, N5EG
>
>
```

#### 47. Re: [DSP-93:475] Re: Comments and questions from K6OYY

From: ljs@rain.org (L.J.Shepherd)  
Date: Sat, 11 Mar 1995 09:17:40 -0800  
To: dsp-93@tapr.org  
Message-ID: <199503111713.JAA12902@coyote.rain.org>  
Rendered body type: text/plain

Hi Mark: Good suggestion, I did install the distrib.disks in a DSP directory so perhaps that is the problem.....I will check the .ini file as Tom has suggested. Thanks for your comments.....more later.  
73, Jim

>Jim,  
>  
>If you did the installation of the distribution diskettes as instructed, I  
>think you should have ended up with everything under  
>  
>c:\dsp93  
>  
>You appear to be one level deeper in your subdirectory structure. I'm not  
>sure, but that might be the problem with locating files when loading the  
>.obj files.  
>  
>As far as the comport conflict, have you double checked to make sure that  
>the D93WE.INI files reflects the correct comport of your DSP unit? The  
>default in the distributed file assumes you have the DSP93 on comport 1.  
>  
>How about the path statements in D93WE.INI to match your \dsp\dsp93  
>directory structure?  
>  
>These are just some simple things that you probably have checked, but I  
>thought them worth mentioning.  
>  
>>  
>> --- I remember something earlier in this SIG about loading the .obj  
>>files into the WINDOWS subdirectory or some other DSP93 directory. I have  
>>not tried that yet.....my path (c:\dsp\dsp93) appears in autoexec.bat.....  
>>do I need to copy the .obj's to some other directory in order to get the  
>>pulldowns for INSTRUMENTS, etc to work ?? They are currently in OBJ  
>>directory .....disk software installation was straightforward and simple.  
>>  
>>Do you have any comment regarding the " \*G " that appears after downloading  
>>some of the .obj files and completion of initialization.  
>>  
>>Thanks again for your assistance !  
>>  
>>73, Jim K6OYY  
>>  
>>  
>>  
>>  
>>  
>Mark L. Hammond [KC4EBR]  
>  
>  
>

---

#### 48. Re: [DSP-93:480] PaKet to/from DSP-93

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sat, 11 Mar 1995 18:28:08 +0000  
To: dsp-93@tapr.org  
Message-ID: <9503111823.AA02316@camel.campbell.edu>  
Rendered body type: text/plain

John,

Let me make sure you have a fundamental understanding of the DSP-93 and how it is supposed to interfaced/used.

The DSP-93 can be used in two basic ways:

- 1) Totally alone
- 2)"Hooked up" to a TNC (such as an MFJ-1270C or the like)

The applications that allow us to use the DSP-93 as a stand-alone box are quite limited and exotic, but these applications are growing rather quickly.

For example, you can use the DSP-93 (without a TNC interfaced) to receive APT WX satellite images, A0-13 400 baud PSK telemetry, DSP audio filter/denoiser (ported W9GR code) and possibly some HF stuff (amtor/CW filter).

Now, to just "talk" to the DSP-93 as a standalone unit, you need a terminal program, such as Procomm, or Terminal (in Windows), or the D93WE terminal program that was written ESPECIALLY with the DSP-93 in mind. This allows data to flow between the DSP-93 and your computer. You can tell it what to do, and it can tell you what it is doing.

You can do a few tests, load the CW audio filter, make your DSP-93 squeek and squak, flash LEDs, etc. by running the programs installed in the DSP-93 ROM chips. But, if you want to print PACKETS, as most of us want to, you need to interface your unit to a TNC.

The wiring of your TNC to the DSP-93 is covered quite well in the DSP-93 assembly manual. Check it carefully, and don't hook up any "extra" wires.

Then what you need to do is something like this. First, get the right modem code for the DSP-93 selected. Assume you want to run 1200 AFSK packet on radio port 1. You can do this by "talking" to the DSP-93 thru a serial connection (comport) using D93WE, Procomm, or Windows Terminal at 19200, N81, NO HANDSHAKING. If you get the \* when you press the reset button, you are looking good! Now, tell the DSP-93 to load the right modem code. Press "P" and then "9" to load PKTP1, which is 1200 afsk packet. You should see the LEDs do their thing (read the docs for which ones should be lit) and you now have the DSP-93 configured!

Next, you have to tell the TNC what the DSP-93 is doing. You must set the TNC to 1200 baud so that the DSP-93 can pass the information (packets) to the TNC in a manner that the TNC can understand. Now, the TNC must pass the packet to your computer. How does it do that? Thru a serial line (comport) from the TNC to your computer.

Optimally, you could have two comports on different interrupts and addresses: One for the TNC (com1, lets say) and another one for the DSP-93 (com2 lets say). That way you can decide whether to send commands to the TNC or the DSP-93 with ease.

Alternatively, you could have a switch box and select which box to talk to by flipping the switch. I did this for a while, but I was forever sending the wrong commands to the wrong box. So, I got more serial ports to avoid the switch box.

Does this help fill in the overall picture of how the unit is designed to work? Clear as mud?!?!

You have two boxes and you need to talk to both of them. Your PaKet program sounds like a good one to talk to the TNC, but I don't think you should use it to talk to the DSP-93. You only need a very simple terminal program to talk to the DSP-93. PaKet is sending TNC commands to the DSP-93, which does NOT understand what it is saying. (for example, MYCALL doesn't mean ANYTHING to the DSP-93!).

Hang in there, you are getting close!!!!

```
>I can get the PaKet to talk to the DSP-93 if I can get them started.
>Is PaKet trying to send the Date-Time to the modem and it doesn't
>like it? Occasionally, I can get some noise sent to the modem and I
>start getting asterisks. Do I need to create a connect file?
>
>73'S JOHN W0UT
```

Mark L. Hammond [KC4EBR]

---

## 49. replacement U112 chip

From: "VON C. DEEKE" <VONDEEKE@delphi.com>  
Date: Sun, 12 Mar 1995 22:34:18 -0500 (EST)  
To: dsp-93@tapr.org  
Message-ID: <01H02C2S1T5E90NHYG@delphi.com>  
Rendered body type: text/plain

Thanks to N5  
BRG for selling 2 74573 chips to me at the TAPR meeting in St. Louis.  
It's helped me get my DSP-93 going. I think I still have a bad chip  
at U112, a GAL22V10A-10LNC.

hen I run TESTLEDS and check with a logic probe, I am not getting any pulses at U112, pin 19, to clock U206 to operate the LED's it controls (L213 & L214 stay lit all of the time). I do get pulses at U112, pins 17 & 20, to clock U204 & U214 to control their associated LED's. I do have continuity between U112, pin 19, and U206, pin 11. Can I buy a replacement U112 (GAL22V10A-10LNC) from TAPR, as this appears to be a custom-programmed IC? I think that I may have originally damaged this chip as well as the 74573 when I initially powered up the boards without having hood contacts on all of the interboard connectors.

Also, I have no connection between JP203, pin 17, and U212 (the ST16550P), pin 25 (the ADS pin, per the schematic). This disagrees with page 4 of the schematic supplied with the kit. I noticed this since it is the same signal that clocks U206. Is this a schematic error or do I have a problem with my kit? I do have a good connection between JP203, pin 17, and U206, pin 11. U212, pin 25 is high at 3.9V. RS-232 comm with my PC seems to be OK so U212 must be basically working.

Thank you for this helpful internet service!

73's  
Von C. Deeke - WB9KDY

---

## 50. Re: [DSP-93:485] replacement U112 chip

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 12 Mar 1995 23:48:19 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503130548.XAA00593@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain

According to VON C. DEEKE:

>  
> Thanks to N5  
> BRG forselling 2 74573 chips to me at the TAPR meeting in St. Louis.  
> It's helped me get my DSP-93 going. I think I still have a bad chip  
> at U112,a GAL22V10A-10LNC.  
>  
>  
> hen I run TESTLEDS and check with a logic  
> probe, I am not getting any pulses at U112, pin 19, to clock U206 to  
> operate the LED's it controls (L213 & L214 stay lit all of the time).  
> I do get pulses at U112, pins 17 & 20, to clock U204 & U214 to control their  
> associated LED's. I do have continuity between U112, pin 19, and U206, pin  
> 11. Can I buy a replacement U112 (GAL22V10A-10LNC) from TAPR, as this  
> appears to be a custom-programmed IC? I think that I may have  
> originally damaged this chip as well as the 74573 when I initially powered up  
> the boards without having hood contacts on all of the interboard connectors.

Yes - the cost is \$12...an expensive chip....I believe we have a few in stock in Tucson. You should contact Dorothy at the office and tell her what you need.

Cheers - Greg

---

## 51. RE: [DSP93DEV:1150] Changes to PCBs

From: Roy Welch <rdw@crl.com>  
Date: Mon, 13 Mar 1995 18:48:38 -0800 (PST)  
To: DSP-93 Info <dsp-93@tapr.org>  
Message-ID: <Pine.SUN.3.91.950313184437.19088D-100000@crl6.crl.com>  
Rendered body type: text/plain

Bob, noticing the board changes, should the beta boards be changed as follows also:

1. Add a gnd to U116, pin 8.
2. Change U207 +5 supply from digital to analog supply

73, Roy

---

## 52. Re: [DSP-93:487] RE: [DSP93DEV:1150] Changes to PCBs

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Mon, 13 Mar 1995 23:02:06 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503140502.XAA16369@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to Roy Welch:

>  
> Bob, noticing the board changes, should the beta boards be changed as  
> follows also:

>  
> 1. Add a gnd to U116, pin 8.

This was only a problem if you got the MAX692 which you did not so no need to make the change on your board.

>  
> 2. Change U207 +5 supply from digital to analog supply

Some of the digital noise does come through the speaker. Changing to analog will reduce this noise. It will be hard to change on your board. You would have to bend out the pin and run a jumper to analog +5 because the pad on the IC is connected to the +5 volt layer of the pcb.

Bob

---

## 53. serial initialization questions

From: morrison@RT66.com (Bill Morrison)  
Date: Tue, 14 Mar 1995 05:53:33 -0700 (MST)  
To: dsp-93@tapr.org  
Message-ID: <9503141253.AA15031@RT66.com>  
Rendered body type: text/plain

I have been working on getting my dsp93 to work for some time. I have had no luck. The problem is that the serial port never pumps out the initial "\*" in the first test.

Questions:

1) After reset, what are the series of writes to the uart that initialize the uart. I have put my board on a logic analyzer and took data on what the data was. I did this a few weeks ago and don't remember what it was, I will have to look through my notes. After seeing good looking data go into the uart, I see nothing coming out. Oh yeah here is what I remember seeing

There were 6 total writes.

- 1) 83 to some register that set the bit per word to 8 and set the dlab bit.
- 2) A 10 written to the lower byte of the divisor latch followed by a
- 3) 00 to the upper byte.
- 4) Then there was a 3 written to the same control register that had the 83 written to previously.
- 5) a 00 was written to a register that I don't remember
- 6) then a CF was written somewhere.

I know this is not really clear, I did this 2 weeks ago and need to double check the addresses that were being written to. I am thinking that either an address line is shorted or a data line is shorted (could not be a problem of it not being connected, that would imply a solder problem :-)

I never did see in the first six writes a "\*" which is a 2A. Maybe it comes later and I did not see it.

2) I have tried a National 16550 UART in here to see if it would work and it did not. What is the real difference between a startech 16550 and a National 16550?

Thanks,

Bill Morrison

---

## 54. Re: [DSP-93:489] serial initialization questions

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 14 Mar 1995 07:35:01 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab8b4b9c020210044736@[204.181.160.17]>  
Rendered body type: text/plain

>I have been working on getting my dsp93 to work for some time. I have had  
>no luck. The problem is that the serial port never pumps out the initial  
>"\*" in the first test.

A simple first test. Are you SURE that you have RTS asserted on the serial port. The DSP-93 will not send data without it.



Ron W5RKN

also:  
w5rkn@amsat.org

---

## 55. Re: [DSP-93:490] Re: serial initialization questions

From: morrison@RT66.com (Bill Morrison)  
Date: Tue, 14 Mar 1995 07:21:51 -0700 (MST)  
To: dsp-93@tapr.org  
Message-ID: <9503141421.AA19417@RT66.com>  
Rendered body type: text/plain

>  
> >I have been working on getting my dsp93 to work for some time. I have had  
> >no luck. The problem is that the serial port never pumps out the initial  
> >"\*" in the first test.  
>  
> A simple first test. Are you SURE that you have RTS asserted on the serial  
> port. The DSP-93 will not send data without it.  
>  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

Yes, I am sure.

Bill

---

## 56. ftp site reorganized

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 14 Mar 1995 11:55:25 -0500  
To: dsp93dev@tapr.org, dsp-93@tapr.org  
Message-ID: <9503141647.AA04032@camel.campbell.edu>  
Rendered body type: text/plain

Gang,

I have renamed all of the subdirectories on the ftp sites to use all lower case letters to make it easier for all of us to type.

Thanks to RoN for pointing out my CarEless uSe of the sHIFT key.

If you have any privilege problems as a result, just let me know.

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 57. Software and Doc Update 3/14/95

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 14 Mar 1995 18:38:18 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab8be41a0502100432f2@[204.181.160.30]>  
Rendered body type: text/plain

DSP-93 Software and Doc Update  
December '94 Production

Updated: 3/14/95

We will try to update this message and post it so ever so often.

-----  
You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to

'listserv@tapr.org', Subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94).

-----  
March 14th, 1995 Update Section

I have entered two bugs on the D93WE bug list:

1. Update to be able to invoke EPROM-resident .OBJ files.
2. Problem with program load at address > 3FFF.

- Tom, N5EG

Problem 2 above also affects DSPLOAD.

In addition, you may not be able to load two .OBJ programs in succession using D93WE without manually resetting the DSP-93 either with the Reset switch or, if the software supports it, sending an 'r' to the DSP-93s serial port.

The references to R214 and R215 in FSK.DOC, PKT.DOC and TESTXXXX.DOC are reversed. R215 (and R216) affects the input gain while R214 (and R213) affects the output signal.

The connector referred to as J203 in TEXTXXXX.DOC actually refers to JP203.

The references to .GIF files in the .DOC files refer to diagrams reproduced in the Assembly Manual.

-----  
January 18th, 1995 Update Section

\* Error in TPRS.ASM and PKT.ASM  
There is an error near line 67 of TPRS.ASM and PKT.ASM.

```
#ifdef G1
GAIN .EQU GAIN2
#endif
```

should be:

```
#ifdef G1
GAIN .EQU GAIN1
#endif
```

\* What are those undocumented holes for?  
What is X0 ? (near P202 and JP203)  
X0 is a buffered version of the input signal with a full +/- 5 volt swing. See page 3 of 5 for the X0 location on the schematic. This signal is for checking your input signal or a monitor.

What is AUX+ ?  
Auxilliary audio input for AIO chip. Requires custom code if a user should ever want to use it. Placed on the board for users that may want to take advantage of this input. See TI TLC32044 data sheet for more details if you are interested.

What is TP1 ?  
TP1 is the primary audio input signal to the AIO chip.

X0 and TP1 make it easier to look at your signals if you have problems.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 58. Re: [DSP-93:490] Re: serial initialization questions

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 14 Mar 1995 19:54:55 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503150154.TAA13396@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

Did he make the ACPA reset chip correction ?

Greg

According to Ronald G. Parsons:

>  
> >I have been working on getting my dsp93 to work for some time. I have had  
> >no luck. The problem is that the serial port never pumps out the initial  
> >"\*" in the first test.  
>  
> A simple first test. Are you SURE that you have RTS asserted on the serial  
> port. The DSP-93 will not send data without it.  
>  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

---

## 59. Box of Workshop material

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Tue, 14 Mar 1995 21:58:45 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503150358.VAA04782@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

The box I lost was returned to me today by American. It turned up at the Hotel in St Louis. The Hotel called me and I contacted American. Sure seems odd that American never knew what happened to the box.

In any case I am passing the workshop material over to Greg tomorrow and he is going to have the TAPR office mail it out to the St Louis workshop participants.

Bob Stricklin, N5BRG

---

## 60. Software update now on ftp

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 15 Mar 1995 17:24:04 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab8d270a000210041280@[204.181.160.6]>  
Rendered body type: text/plain

I put the file "SoftUpdate-3-14-95" in the tapr/dsp93/updates directory of ftp.tapr.org.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 61. [DSP-93:496] SOFTWARE UPDATE NOW ON FTP

From: wtb@partyline.org  
Date: Wed, 15 Mar 95 22:11:29 -0600  
To: dsp-93@tapr.org  
Message-ID: <9503152211.0V6AR00@partyline.org>  
Rendered body type: text/plain

Ron

Is there a way to get the software update file using only email access? Bill NOLIK

---

## 62. Re: SOFTWARE UPDATE NOW ON FTP

From: "Bent Bagger" <bb@craycom.dk>  
Date: Thu, 16 Mar 1995 08:48:04 GMT+1  
To: dsp-93@tapr.org  
Message-ID: <18090971D2@rd.craycom.dk>  
Rendered body type: text/plain

Bill, NØLIK, writes:  
>  
> Is there a way to get the software update file using only email  
> access? Bill NØLIK  
>  
You might try one of the ftpmail server on the Internet. I know of  
one in the States:  
  
ftpmail@decwrl.dec.com  
  
Send a message with a contents of 'help' (without the quotes) to get  
started.  
  
There are other ftpmail servers available.  
  
73 de Bent/OZ6BL

---

### 63. [DSP-93:492] ftp site reorganized -Reply

From: PAUL SHUCH <PSHUCH@pct.edu>  
Date: Thu, 16 Mar 1995 10:09:54 -0500  
To: dsp-93@tapr.org  
Message-ID: <sf680fb6.006@pct.edu>  
Rendered body type: text/plain  
  
>>> Mark L. Hammond <hammond@camel.campbell.edu> 03/14/95  
12:06pm >>>  
Thanks to RoN for pointing out my CarEless uSe of the sHIFt key.

-----  
whErE the heLl iS MY cApS L0ck?

n6Tx

---

### 64. Re: [DSP-93:484] Re: PaKet to/from DSP-93

From: geofft@suburbia.apana.org.au (Geoff Taurins)  
Date: Fri, 17 Mar 1995 10:40:24 +1100  
To: dsp-93@tapr.org  
Message-ID: <199503162336.KAA02897@suburbia.apana.org.au>  
Rendered body type: text/plain  
  
>The applications that allow us to use the DSP-93 as a stand-alone box are  
>quite limited and exotic, but these applications are growing rather quickly.  
>For example, you can use the DSP-93 (without a TNC interfaced) to receive  
>APT WX satellite images, AO-13 400 baud PSK telemetry, DSP audio  
>filter/denoiser (ported W9GR code) and possibly some HF stuff (amtorg/CW  
>filter).  
>  
>G'day Mark, name here is Geoff. You mentioned an audio denoiser/filter for  
the dsp93 in a reply to someone. Any idea where to get it from????  
  
73 Geoff vk3jdg@amsat.org

---

### 65. Re: [DSP-93:500] Re: PaKet to/from DSP-93

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 16 Mar 1995 17:59:05 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab8e81070c0210045507@[204.181.160.19]>  
Rendered body type: text/plain  
  
>>The applications that allow us to use the DSP-93 as a stand-alone box are  
>>quite limited and exotic, but these applications are growing rather quickly.  
>>For example, you can use the DSP-93 (without a TNC interfaced) to receive  
>>APT WX satellite images, AO-13 400 baud PSK telemetry, DSP audio  
>>filter/denoiser (ported W9GR code) and possibly some HF stuff (amtorg/CW  
>>filter).  
>>  
>>G'day Mark, name here is Geoff. You mentioned an audio denoiser/filter for  
>the dsp93 in a reply to someone. Any idea where to get it from????  
>  
>73 Geoff vk3jdg@amsat.org

The code you mention is in the last stages of development and testing. I  
hope it will be ready when the next batch of kits ship (in April?).

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 66. dsp audio stuff

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 16 Mar 1995 19:14:48 -0500  
To: dsp-93@tapr.org  
Message-ID: <9503170006.AA03042@camel.campbell.edu>  
Rendered body type: text/plain

Hi Geoff,

The W9GR code has been ported by Mike, N4IRR. We, the dsp development team, are testing his current versions. Expect release of at least a terminal/text based version of his code shortly - most likely coincident with the next release of kits and diskettes. Mike is also working on a Window's based interface (even as we speak!) that will hopefully be available then, too.

We will be sure to post the official release to the TAPR anonymous ftp site as soon as we can, and this group will be the first to know, you can be sure! Hang in there (it's neat stuff to play with!)

```
>>APT WX satellite images, A0-13 400 baud PSK telemetry, DSP audio
>>filter/denoiser (ported W9GR code) and possibly some HF stuff (amtow/CW
>>filter).
>>
>G'day Mark, name here is Geoff. You mentioned an audio denoiser/filter for
>the dsp93 in a reply to someone. Any idea where to get it from???
>
>73 Geoff vk3jdg@amsat.org
```

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 67. Re: [DSP-93:437] Re: 1200/960...

From: DTownsend@aol.com  
Date: Fri, 17 Mar 1995 07:49:09 -0500  
To: dsp-93@tapr.org  
Message-ID: <950317074907\_52301989@aol.com>  
Rendered body type: text/plain

Thanks for the advice. I will give it a try.

---

## 68. Yaesu 736

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 19 Mar 1995 08:03:50 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab91e9cf00021004e57d@[204.181.160.13]>  
Rendered body type: text/plain

We still need that writeup for the connections from the DSP-93 to the Yaesu 736 for the Operations Manual.

Isn't anyone using a 736???

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 69. Re: [DSP-93:504] Yaesu 736

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sun, 19 Mar 1995 21:33:13 +0000  
To: dsp-93@tapr.org  
Message-ID: <9503192129.AA13006@camel.campbell.edu>  
Rendered body type: text/plain

Ron,

If you buy me one, I will mod it and write it up for the manual!

:)

>We still need that writeup for the connections from the DSP-93 to the Yaesu  
>736 for the Operations Manual.

>

>Isn't anyone using a 736???

>

>

>Ron W5RKN

>

>also:

>w5rkn@amsat.org

>

>

>

>

Mark L. Hammond [KC4EBR]

---

## 70. Using DSP-93 with unsquelched input

From: "Bent Bagger" <bb@craycom.dk>  
Date: Mon, 20 Mar 1995 09:01:51 GMT+1  
To: dsp-93@tapr.org  
Message-ID: <287DD246EB@rd.craycom.dk>  
Rendered body type: text/plain

My radios take the audio input for the modem/TNC directly from the discriminator. This fact has at least two consequences:

- 1) The input level is fairly low - approx. 500 mV p-p for data and approx 1 V p-p for the noise.
- 2) The DCD is always active (low) because there is always an input signal present.

I use the modem PKT.

The low input level means that R215 must be adjusted almost all the way to the top, before the TNC can decode the frames reliably. Using a gain setting of 5 or 6 when assembling PKT makes it easier to adjust R215.

BTW: The signal is being limited at about +- 2.2 V peak rather than the 3 volts mentioned in PKT.DOC and on the schematic diagram (A10 [3 of 5]). Is this normal?

The always present DCD causes a problem when running terrestrial packet: I have to set the TNC to full duplex in order to transmit at all. This makes me rather unpopular with the other stations. I know this is not an issue when it comes to satellites, but it would be nice to be able to use the DSP-93 for terrestrial packet as well.

I have tried to reduce the input level and when it gets low enough, the DCD signal start to flicker with the noise and go on with data, but then the level is far too low to have any packets decoded by the TNC.

Does anybody have suggestions for how to make the DCD signal work as desired?

The radio I use are converted radio telephones of Danish manufacture (Storno, AP), so I won't bother you with interfacing details here.

The TNC is a TNC-2C which has a non-standard disconnect header, but which works anyway. The only snag here is that the TNC-2C would like DCD to be active high rather than active low. I have solved this problem by inverting the settings of LED 213 in the code.

Comments anyone? What I'm especially interested in is, whether this can be solved in software at all, or wheter I'll have to make a hardware modification to my radios, e.g. installing a squelch controlled gate in the data path from the discriminator to the modem.

Best 73 de Bent/OZ6BL

Bent Bagger bb@craycom.dk  
Systems Engineer ...!mcsun!dkuug!sony!bb  
Cray Communications A/S - Denmark Voice: +45 44530100  
Fax: +45 44531415

## 71. Re: [DSP-93:506] Using DSP-93 with unsquelched input

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 20 Mar 1995 08:13:19 -0600  
To: dsp-93@tatr.org  
Message-ID: <ab933cdc0102100430f3@[204.181.160.12]>  
Rendered body type: text/plain

Bent,

Some questions and comments:

```
>My radios take the audio input for the modem/TNC directly from
>the discriminator. This fact has at least two consequences:
...
>BTW: The signal is being limited at about +- 2.2 V peak rather
>than the 3 volts mentioned in PKT.DOC and on the schematic
>diagram (AIO [3 of 5]). Is this normal?
```

How did you determine this limiting voltage?

```
>Comments anyone? What I'm especially interested in is, whether
>this can be solved in software at all, or wheter I'll have to
>make a hardware modification to my radios, e.g. installing a
>squelch controlled gate in the data path from the discriminator
>to the modem.
```

Frank Perkins and I discussed this last week. He has developed an FSK modem with "true" DCD. When time is available, one or both of us will look into a "true" DCD PKT modem.

Ron W5RKN

also:  
w5rkn@amsat.org

## 72. Re: Re: Using DSP-93 with unsquelched input

From: "Bent Bagger" <bb@craycom.dk>  
Date: Mon, 20 Mar 1995 15:43:17 GMT+1  
To: dsp-93@tapr.org  
Message-ID: <2F2EAE00CA@rd.craycom.dk>  
Rendered body type: text/plain

Ron, W5RKN, writes:

```
>
> How did you determine this limiting voltage?
>
```

I attached a scope to TP1 and read the voltage off the screen of the scope. There was a pronounced 'flat-topping' for both noise and data at  $\sim \pm 2.2$  V p-p.

```
>
> Frank Perkins and I discussed this last week. He has developed an FSK modem
> with "true" DCD. When time is available, one or both of us will look into a
> "true" DCD PKT modem.
>
That would be nice...
```

Thanks for your reply.

Best 73 de Bent/0Z6BL

Bent Bagger  
Systems Engineer  
Cray Communications A/S - Denmark

bb@craycom.dk  
...!mcsun!dkuug!sony!bb  
Voice: +45 44530100  
Fax: +45 44531415

### 73. unsquelched input

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 20 Mar 1995 11:23:50 -0500  
To: dsp-93@tapr.org  
Message-ID: <9503201617.AA15556@camel.campbell.edu>  
Rendered body type: text/plain

Bent,

I also use the discriminator audio for the PKT modems and see EXACTLY what you describe. You are right on track. One must use fulldup on and be rude in order to transmit....

Ater talking to Frank about this, it was pretty clear to me that, if possible, one should use the "regular" audio out of the rig.

My fussing is because I mostly use FSK and PKT and want to use only one cable for both.....

Maybe those brilliant code-gurus will help us out with a version of PKT with "true DCD detect".....

I second the "that would be nice" comment :)

>Ron, W5RKN, writes:

>

>> Frank Perkins and I discussed this last week. He has developed an FSK modem  
>> with "true" DCD. When time is available, one or both of us will look into a  
>> "true" DCD PKT modem.

>>

>That would be nice...

>

>Thanks for your reply.

>

>Best 73 de Bent/OZ6BL

>-----

>Bent Bagger

bb@craycom.dk

>

...!mcsun!dkuug!sony!bb

>Systems Engineer

Voice: +45 44530100

>Cray Communications A/S - Denmark

Fax: +45 44531415

>-----

Mark L. Hammond, Ph. D. (KC4EBR)

hammond@camel.campbell.edu

Campbell University

Department of Biology

Buies Creek, NC 27506

1-919-893-1734 or

1-800-334-4111, ext. 1734

---

## 74. Re: [DSP-93:504] Yaesu 736

From: Carol Byers <crlbyers@garlic.com>  
Date: Mon, 20 Mar 1995 12:56:56 -0800 (PST)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950320125603.47479A@garlic.com>  
Rendered body type: text/plain

Hi Ron, am not that far along, but will do in when I huck it up to my 736..

Carol

On Sun, 19 Mar 1995, Ronald G. Parsons wrote:

> We still need that writeup for the connections from the DSP-93 to the Yaesu  
> 736 for the Operations Manual.

>

> Isn't anyone using a 736???

>

>

> Ron W5RKN

>

> also:

> w5rkn@amsat.org

>

>

>

---

## 75. Re: [DSP-93:508] Re: +- 2.2 V p-p



From: Bob Stricklin <bstrick@tenet.edu>  
Date: Tue, 21 Mar 1995 19:03:29 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503220103.TAA17795@Joyce-Perkins.tenet.edu>  
Rendered body type: text/plain

Bent,

Double check the value and placement of R211 and R209. Having them reversed would give you a 2.2 limit.

If OK, report the p-p reading at pin 7 of U202B, pin 3 of U202 and 11 of U203 assuming you are using radio 1 input.

Bob Stricklin, N5BRG

---

## 76. (no subject)

From: STAM103W@WONDER.EM.CDC.GOV  
Date: Wed, 22 Mar 95 12:31:00 EST  
To: dsp-93@tapr.org  
Message-ID: <2F6FDF97@SmtplOut.em.cdc.gov>  
Rendered body type: text/plain

FROM: Stampf, Charles E.  
TO: SMTP:dsp-93@tapr.org  
CC:  
SUBJECT:  
DATE: 03-22-95 12:25 EST  
PRIORITY:

unsubscribe Charlie Stampf

---

## 77. "Box" data shipment

From: wtb@partyline.org  
Date: Wed, 22 Mar 95 21:07:44 -0600  
To: dsp-93@tapr.org  
Message-ID: <9503222107.0TOKT00@partyline.org>  
Rendered body type: text/plain

Bob

The data from the St. Louis get together has been received and is greatly appreciated, however, the disk has only one file on it and has no meaning. The file is a directory file of zero bytes and the rest of the disk is blank????

Bill NOLIK

---

## 78. Re: +- 2.2 V p-p

From: "Bent Bagger" <bb@craycom.dk>  
Date: Thu, 23 Mar 1995 12:44:17 GMT+1  
To: dsp-93@tapr.org  
Message-ID: <74354A46E3@rd.craycom.dk>  
Rendered body type: text/plain

Bob,

I have checked the value of R211 and R209 by reading the color markings on the resistors. An in-circuit measurement was not possible. Both resistors are OK: R209 = 30K (orange-black-orange); R211 = 20K (red-black-red). The tolerance is 5% (gold). The placement is correct according to the silk print and the parts layout.

I then checked the calibration of my scope (a Gould 0S250). I could only verify the DC calibration due to lack of a calibrated signal generator. It (or rather the probe) was a bit on the low side: a 5.0 V voltage read as 4.6 V on the scope. This raises the 'true' voltage somewhat but not enough.

I then read the following p-p values (I do use radio port 1):

TP1: +2.2 -2.4 V  
U202-7: +3.6 -4.8 V  
U203-3: +200 -240 mV  
U203-11: +200 -240 mV  
Discriminator output: ~500 mV

These measurements are taken with the scope in DC mode and it turns out that the swing is not quite symmetrical. The first measurements

were taken in AC mode.

I hope this sheds some light on the situation.

Best 73 de Bent/OZ6BL

---

## 79. Re: [DSP-93:514] Re: +- 2.2 V p-p

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 23 Mar 1995 10:19:47 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab975017080210044627@[204.181.160.27]>  
Rendered body type: text/plain

Bent,

>I then read the following p-p values (I do use radio port 1):

>

>TP1: +2.2 -2.4 V

>U202-7: +3.6 -4.8 V

>U203-3: +200 -240 mV

>U203-11: +200 -240 mV

>Discriminator output: ~500 mV

>

>These measurements are taken with the scope in DC mode and it turns

>out that the swing is not quite symmetrical. The first measurements

>were taken in AC mode.

Are these values in a situation where you see clipping?

Other than the lower than expected values, is it causing a problem?

We have observed that about 1V p-p at TP1 is all that should be applied to the AIO chip. Above that value, clipping occurs in the digitizing process.

The non-symmetry has been seen before by W0SL.

Roy, does this appear to be similar to the asymmetry you saw. How did you finally resolve that?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 80. Re: [DSP-93:514] Re: +- 2.2 V p-p

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 23 Mar 1995 07:36:37 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab9728c8060210040a37@[204.181.160.27]>  
Rendered body type: text/plain

Bent,

>I then read the following p-p values (I do use radio port 1):

>

>TP1: +2.2 -2.4 V

>U202-7: +3.6 -4.8 V

>U203-3: +200 -240 mV

>U203-11: +200 -240 mV

>Discriminator output: ~500 mV

>

>These measurements are taken with the scope in DC mode and it turns

>out that the swing is not quite symmetrical. The first measurements

>were taken in AC mode.

Are these values in a situation where you see clipping?

Other than the lower than expected values, is it causing a problem?

We have observed that about 1V p-p at TP1 is all that should be applied to the AIO chip. Above that value, clipping occurs in the digitizing process.

The non-symmetry has been seen before by W0SL.

Roy, does this appear to be similar to the asymmetry you saw. How did you finally resolve that?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 81. Re: [DSP-93:515] Re: +- 2.2 V p-p

From: Roy Welch <rdw@crl.com>  
Date: Thu, 23 Mar 1995 13:28:27 -0800 (PST)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950323131739.1320A-100000@crl110.crl.com>  
Rendered body type: text/plain

On Thu, 23 Mar 1995, Ronald G. Parsons wrote:

```
> Bent,
>
> >I then read the following p-p values (I do use radio port 1):
> >
> >TP1: +2.2 -2.4 V
> >U202-7: +3.6 -4.8 V
> >U203-3: +200 -240 mV
```

Isn't the above pin supposed to be -5v supply (U203-3)?

```
> >U203-11: +200 -240 mV
> >Discriminator output: ~500 mV
> >
> >These measurements are taken with the scope in DC mode and it turns
> >out that the swing is not quite symmetrical. The first measurements
> >were taken in AC mode.
>
> Are these values in a situation where you see clipping?
>
> Other than the lower than expected values, is it causing a problem?
> We have observed that about 1V p-p at TP1 is all that should be applied to
> the A10 chip. Above that value, clipping occurs in the digitizing process.
>
> The non-symmetry has been seen before by W0SL.
>
> Roy, does this appear to be similar to the asymmetry you saw. How did you
> finally resolve that?
```

I'm not sure, but I suggest looking at the DC voltage on U208-8 (REF). Seems like it was around 3.2 volts, but not sure. Check it for stability. Also mine cleared up after resoldering C208, the bypass for that pin. Also push the U208-8 pin while the chip is in the socket and see if any fluxuations are seen. The voltage on this pin should be very stable.

73, Roy

---

## 82. Re: [DSP-93:517] Re: +- 2.2 V p-p

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 23 Mar 1995 16:09:09 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab97a1ce090210047930@[204.181.160.27]>  
Rendered body type: text/plain

>On Thu, 23 Mar 1995, Ronald G. Parsons wrote:

```
>
>> Bent,
>>
>> >I then read the following p-p values (I do use radio port 1):
>> >
>> >TP1: +2.2 -2.4 V
>> >U202-7: +3.6 -4.8 V
>> >U203-3: +200 -240 mV
>
```

>Isn't the above pin supposed to be -5v supply (U203-3)?

I think he meant U202-3.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 83. Building .docs for DSP-93 Unit?

From: Simon Lewis <slewis@pacsat.demon.co.uk>  
Date: Thu, 23 Mar 1995 20:18:56 GMT  
To: dsp-93@tapr.org  
Message-ID: <15@pacsat.demon.co.uk>  
Rendered body type: text/plain

Hello all from a newbie to Internet!

I've been interested in the DSP-93 project for a while. Does anyone have any doc files on constructing the kit and/or doc files on a more fuller description than the tapr info I received some time ago.

I'd also like some help on how to get files from the listproc at tapr. Ive tried a few times and got errors in my replies!

Does the DSP-93 software lie on the tapr ftp site? and if so does it have doc files descibing the software?

```
+-----+
| 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland |
| Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk |
| AMSAT - UK Member 4282 **** SUPPORT YOUR LOCAL AMSAT GROUP **** |
+-----+
```

---

## 84. Re: [DSP-93:519] Building .docs for DSP-93 Unit?

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 23 Mar 1995 18:07:44 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab97bd2c0a021004e750@[204.181.160.27]>  
Rendered body type: text/plain

>Hello all from a newbie to Internet!  
>  
>I've been interested in the DSP-93 project for a while. Does anyone have  
>any doc files on constructing the kit and/or doc files on a more fuller  
>description than the tapr info I received some time ago.  
>  
>I'd also like some help on how to get files from the listproc at tapr.  
>Ive tried a few times and got errors in my replies!

DSP-93 Archive

-----  
Past messages from the DSP-93 list are availble in the TAPR.ORG archives.  
Send mail to 'listserv@tapr.org' with the following in the message body:

index dsp93

To get files from the archive, send e-mail to 'listserv@tapr.org' with the following in the message body:

get dsp93 filename

where filename is the name of the file you are request.

Also try:

help

Hope this helps!

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 85. Re: [DSP-93:513] "Box" data shipment

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Thu, 23 Mar 1995 21:23:27 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503240323.VAA17443@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain

According to wtb@partyline.org:

>  
>  
> Bob  
> The data from the St. Louis get together has been received and

> is greatly appreciated, however, the disk has only one file on  
> it and has no meaning. The file is a directory file of zero bytes  
> and the rest of the disk is blank????  
> Bill NOLIK  
>  
Is this a bad news message or what? Does not sound like something I can  
blame on American.

I have one of the disk here and it looks fine. Make that two disk that I  
have which look fine.

Hopefully yours just did not copy. If I post the disk as a ZIP file on the  
FTP site for TAPR can you get it this way?

Do others have this problem?

Bob Stricklin, N5BRG

---

## 86. Re: +- 2.2 V p-p

From: "Bent Bagger" <bb@craycom.dk>  
Date: Fri, 24 Mar 1995 09:46:21 GMT+1  
To: dsp-93@tapr.org  
Message-ID: <144194184@rd.craycom.dk>  
Rendered body type: text/plain

> Are these values in a situation where you see clipping?

Yes, there is clipping on the noise and on some of the louder signals  
I hear from the other stations.

> Other than the lower than expected values, is it causing a  
> problem?

No, the TNC decodes the frames beautifully.

> We have observed that about 1V p-p at TP1 is all that should be  
> applied to the AIO chip. Above that value, clipping occurs in the  
> digitizing process.  
>

I cranked it all the way up to the clipping level because PKT.DOC  
mentions that when LED206 (I believe - I do not have PKT.DOC in  
front of me right now) glows at about 75%, then I would see the +- 3  
V signal at TP1.

And BTW I do mean U202-3. Sorry for the slip of the finger.

Best 73 de Bent/OZ6BL

---

## 87. [DSP-93:521] RE: "BOX" DATA SHIPMENT

From: wtb@partyline.org  
Date: Fri, 24 Mar 95 22:13:17 -0600  
To: dsp-93@tapr.org  
Message-ID: <9503242213.0V7TD00@partyline.org>  
Rendered body type: text/plain

Bob  
I am trying to use ftpmail to transfer files from known sources  
but so far all I get is complaint about my format and details  
of address and file identification. If TAPR can give me a hint  
on the proper use of ftpmail to get the bad disk data I would be  
more than willing to try.  
Bill NOLIK

---

## 88. Re: [DSP-93:523] RE: "BOX" DATA SHIPMENT

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Sat, 25 Mar 1995 17:21:48 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503252321.RAA01545@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain

Pass along your address and I will mail you another copy.

Pick up one of the books on the internet. It should have a section on ftping  
files.

Bob, N5BRG

## 89. [DSP-93:524] RE: "BOX" DATA SHIPMENT

From: wtb@partyline.org  
Date: Sat, 25 Mar 95 22:17:41 -0600  
To: dsp-93@tapr.org  
Message-ID: <9503252217.0VBJ700@partyline.org>  
Rendered body type: text/plain

Bob

Address is W.T.Boman N0LIK  
9146 Saddlebrook  
St. Louis, MO 63126

I'm working with a book on Navigating the internet but it cant  
go into every detail. I'll keep trying. Thanks.

---

## 90. ACARS SOFTWARE WANTED

From: Simon Lewis <slewis@pacsat.demon.co.uk>  
Date: Sun, 26 Mar 1995 21:50:03 GMT  
To: dsp-93@tapr.org  
Message-ID: <23@pacsat.demon.co.uk>  
Rendered body type: text/plain

HI All

Probably not the right place to ask - but does anyone have ANY ACARS decoding  
information for the aeronautical packet system?

Any helpfrom like minded individuals would be very helpful, wether this is dsp  
based, soundcard or modem based.

```
+-----+
| 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland |
| Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk |
| AMSAT - UK Member 4282 **** SUPPORT YOUR LOCAL AMSAT GROUP **** |
+-----+
```

---

## 91. Re: [DSP-93:526] ACARS SOFTWARE WANTED

From: "Stephen Martin" <martin4s@CC.IMS.DISA.MIL>  
Date: Sun, 26 Mar 95 19:29:58 EST  
To: dsp-93@tapr.org  
Message-ID: <9502267962.AA796275319@CC.IMS.DISA.MIL>  
Rendered body type: text/plain

I would contact Aeronautical Radio, Inc (ARINC) at 2551 Riva Road,  
Annapolis, Maryland, 21401. I think you will find the technical  
details of what you are looking for in ARINC Characteristic 597-3  
(published Oct 31, 1983) "ARINC Communications Addressing and  
Reporting System (ACARS)". This document describes the airborne  
components of ACARS, including format of the message structure.

73/ Steve NK3R

\*\*\*\*\*

>HI All

>

>Probably not the right place to ask - but does anyone have ANY ACARS decoding  
>information for the aeronautical packet system?

>

>Any helpfrom like minded individuals would be very helpful, wether this is dsp  
>based, soundcard or modem based.

>

```
>+-----+
>+ | 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland
>| | Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk
>| | AMSAT - UK Member 4282 **** SUPPORT YOUR LOCAL AMSAT GROUP ****
>|
>+-----+
```

---

## 92. Re: Ftpmail

From: "Bent Bagger" <bb@craycom.dk>  
Date: Mon, 27 Mar 1995 09:08:49 GMT+1  
To: dsp-93@tapr.org  
Message-ID: <47A6715F1D@rd.craycom.dk>  
Rendered body type: text/plain

Bill (N0LIK),

here is a copy of a message I succesfully have used to get GhostView  
(which I use in a completely other context than the DSP-93!)mailed  
to me:

```

reply bb@craycom.dk
connect ftp.cs.wisc.edu
binary
chdir /pub/ghost/rjl
uuencode
get gsvw113b.zip
quit

```

If you do something similar, you should be able to get what you want  
out of 'ftp.tapr.org'. If not, drop me a line by e-mail, and I'll get  
it for you and e-mail it to you.

Best 73 de Bent/OZ6BL

---

### 93. DSP-93 WIRE CONNECTS

From: john.bandy@twsubbs.twsu.edu (JOHN BANDY)  
Date: Sun, 26 Mar 95 23:35:00 -0600  
To: DSP-93@TAPR.ORG  
Message-ID: <8A63587.019A014D4D.uuout@twsubbs.twsu.edu>  
Rendered body type: text/plain

During troubleshooting the speaker wires, volume control wires, etc.  
have broken off several times from the PCB. I saw a beta at the  
St. Louis meeting and it had male-female connectors for these wires at  
the PCB end. Also the speaker female jack is poor quality. Why cannot  
a 2" speaker be installed on the side of the cabinet? I did not  
find screws long enough and nuts to mount the serial port to the  
PCB. The instructions said use "solderable mounting tangs" if you  
have them and I did not have any. 73's, JOHN W0UT.

---  
□ OLX 2.1 TD □ It's only a hobby ... only a hobby ... only a

-----  
The Wichita State University BBS (316)-689-3779 Wichita Ks ,USENET:  
Execnet:Fringenet:Internet:Ilink:Intelec:MLPnet:P&Bnet:Smartnet:U'NI-net  
-----

---

### 94. Re: No Audio from DSP-93

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 27 Mar 1995 09:13:30 -0600  
To: john.bandy@twsubbs.twsu.edu (JOHN BANDY)  
Cc: dsp-93@tapr.org  
Message-ID: <ab9c81c000021004ac16@[204.181.160.27]>  
Rendered body type: text/plain

John,

Please send problem reports to dsp-93@tapr.org. Better chance of a response.

>My modem passed tests 1, 2, 3, 4, & 9. It does not produce any speaker  
>audio on tests 5, 6, 7 but the leds light and sequence properly.  
>There is 5 volts on pin 6 of U207. The voltages are also there on U208.  
>I reheated the solder joints on U207, C234, C236, C237, R235, and tried  
>another speaker. When I turn the modem on the speaker produces a single  
>click sound.

This sounds like a "gap" in the circuit between the AIO chip (U208) and the  
amplifier (U207). What you are hearing the the power transient in the amp.

>In tests 5, 6 they say connect the scope to pin 10 of J203  
>don't they mean pin 10 of JP203.

Yes!

>I tried to use a scope but did not  
>get any of the patterns but I may have had it set or connected wrong.  
>I had the x volts/cm set to auto sweep. I had the sweep range set to  
>10 or 2 msec dc.

If you mean 10 or 20, that should be ok.

>I had the y volts/cm set at 1 volt/cm dc. I had one  
>lead connected from the y input to pin 10 of JP203 in test 5 & 6 and

>to pin 7 of U202 in the test 7. I used an audio generator signal at  
>about .3 khz in test 7. No leads was connected to sync out, trigger  
>out, x input, or ground terminals on the scope. When I connected the  
>scope the pattern would change but the pattern did not change when  
>I ran the programs. The pattern on test 7 would change when I changed  
>the audio frequency. The patterns I got were roughly sin waves of  
>various amplitude. Any suggestions will be appreciated. 73's John W0UT.

First make sure you understand how to use your scope. Check it on the  
output of the audio generator.

Do you have signal output on pins 21 or 22 of U208? If so, trace the output  
from there toward the speaker and JP203-10.

On test 7, do you see the gain steps on the scope as you watch the LEDs change?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 95. Another assembler

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 28 Mar 1995 06:46:41 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab9db4ea05021004d665@[204.181.160.10]>  
Rendered body type: text/plain

To : DL3DA  
From: W5RKN  
Time: 124208UTC  
Date: 28 Mar 1995  
-----

Hello Karl,

> Hello Ron, hello all DSP-93 users,  
>  
> just at a time, where I get familiar with the assembler delivered with  
> the DSP-93 kit, I found a new one. I had not the time to compare and there  
> is one disadvantage, namely all documentation I found is written in German.  
> But: It is Public Domain, the source code (Turbo Pascal 6.0) is available  
> and it supports a lot of CPUs i.e. the TMS 3202x, the Z80, Z180 and Z380,  
> PICs of the 16C5x types, 68xx and 68xxx, 80C166 and 80C167, NEC V35 and so  
> on. The assembler is written for MS-DOS and OS/2.  
>  
> The wire-connected of you may probably want to download it from:  
>  
> ftp.uni-stuttgart.de ( files at pub/systems/pc/lang/as )  
>  
> As I am only amateur radio orientated I do not know, if there is any  
> english documentation. I thought I should give this info in case anyone is  
> interested.  
>  
> 73, Karl DL3DA in Goettingen

Thanks, I'll cross-post this on the Internet mail list.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : K0-23, K0-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 96. PKT modem with DCD

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 28 Mar 1995 06:50:50 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab9db52306021004e3ca@[204.181.160.10]>



Rendered body type: text/plain

I have a beta of a PKT modem with DCD. It detects the "flag" byte in the packet.

If you would like to try it out, let me know and I'll e-mail the .OBJ file to you. Please specify radio port and gain.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 97. ftpmail

From: wtb@partyline.org  
Date: Tue, 28 Mar 95 11:55:18  
To: dsp-93@tapr.org  
Message-ID: <9503281155.0GQXP00@partyline.org>  
Rendered body type: text/plain

Bent OZ6BL

Thanks for the response re the use of ftpmail. Your model reflects what I think I know about the ftpmail request format.

My efforts so far relate to three requests:

1- I would still like to establish a channel to tapr.org to be able to get DSP-93 upgrades or new files. I need the file name of the update from the St.Louis convention (Bob Stricklin please note) and will try through ftp.tapr.org.

2- There is a file named UNKN422.ZIP which is a noisy EME CW recording which I have been told is at:

ftp.webcom.com/pub/af9y/www/

Several different attempts to break this into "connect" and "chdir" have been rejected because webcom.com/pub/wf9y/www/ is "not registered with the DNS(Domain Name Service)", whatever that means. If and when I break the address code I'll still have the ascii vs binary question and the compression method question. I dont think I care about either since deciphering zipped ascii or binary (pkunzip or uuencode) can be handled after I get my hands on the kernel. However, as the requester, I probably must declare at the time of the request or the host will reject.

3- The other file I am attempting to obtain is a HF decoder identified as:

ftp://ftp.ucsd.edu/hamradio/packet/tcpip/incoming/viterbi.zip  
Attempts to split this into ftpmail request pieces has also failed to date.

I will try your format for Ghostwriter to test my channels and will also look into file transfer through Compuserve for the above three files.

Again, thanks for your interest and help.

BILL NØLIK

---

## 98. ftpmail

From: wtb@partyline.org  
Date: Tue, 28 Mar 95 11:57:29  
To: dsp-93@tapr.org  
Message-ID: <9503281157.0GSRQ00@partyline.org>  
Rendered body type: text/plain

Bent OZ6BL

Thanks for the response re the use of ftpmail. Your model reflects what I think I know about the ftpmail request format.

My efforts so far relate to three requests:

1- I would still like to establish a channel to tapr.org to be able to get DSP-93 upgrades or new files. I need the file name of the update from the St.Louis convention (Bob Stricklin please note) and will try through ftp.tapr.org.

2- There is a file named UNKN422.ZIP which is a noisy EME CW recording which I have been told is at:

ftp.webcom.com/pub/af9y/www/

Several different attempts to break this into "connect" and "chdir" have been rejected because webcom.com/pub/wf9y/www/ is "not registered with the DNS(Domain Name Service)", whatever that means. If and when I break the address code I'll still have the ascii vs binary question and the compression method question. I dont think I care about either since deciphering zipped ascii or binary (pkunzip or

uuencode) can be handled after I get my hands on the kernel. However, as the requester, I probably must declare at the time of the request or the host will reject.

3- The other file I am attempting to obtain is a HF decoder identified as:  
ftp://ftp.ucsd.edu/hamradio/packet/tcpip/incoming/viterbi.zip  
Attempts to split this into ftpmail request pieces has also failed to date.

I will try your format for Ghostwriter to test my channels and will also look into file transfer through Compuserve for the above three files.

Again, thanks for your interest and help.

BILL NØLIK

---

## 99. [DSP-93:521] RE: "BOX" DATA SHIPMENT

From: wtb@partyline.org  
Date: Tue, 28 Mar 95 13:15:41  
To: dsp-93@tapr.org  
Message-ID: <9503281315.0IMON00@partyline.org>  
Rendered body type: text/plain

Bob  
Need the file name to try ftpmail.  
BILL NØLIK

---

## 100. Re: [DSP-93:533] ftpmail

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Tue, 28 Mar 1995 22:31:25 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503290431.WAA17379@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain

I have not placed the WORKSHOP.ZIP file on tapr.org. Will do so soon though. File is about 500K and just have not had a chance to get it uploaded.

Bill, I did mail you a disk two days ago.

Bob, N5BRG

---

## 101. Ethernet interface

From: Kohjin Yamada <kohjin@cosmos.marina.prug.or.jp>  
Date: Wed, 29 Mar 1995 14:59:32 +0900  
To: dsp-93@tapr.org  
Message-ID: <199503290559.OAA05578@cosmos.marina.prug.or.jp>  
Rendered body type: text/plain

Bob,

I was told you have been designing an Ethernet interface for the DSP-93. Can I ask (about) when it will be available for us?

73 Kohjin JR1EDE

---

## 102. +- 2.2 V p-p encore

From: "Bent Bagger" <bb@craycom.dk>  
Date: Wed, 29 Mar 1995 13:35:28 GMT+1  
To: dsp-93@tapr.org  
Message-ID: <7C19DF6ABE@rd.craycom.dk>  
Rendered body type: text/plain

I have done as suggested by Roy Welch <rdw@crl.com>:

> I'm not sure, but I suggest looking at the DC voltage on U208-8  
> (REF). Seems like it was around 3.2 volts, but not sure . Check it  
> for stability. Also mine cleared up after resoldering C208, the  
> bypass for that pin. Also push the U208-8 pin while the chip is in  
> the socket and see if any fluxuations are seen. The voltage on this  
> pin should be very stable.

The voltages on U208-8 measures 3.03 V and it is stable as a rock. It is also vere 'pure' with only a slight trace of 50 Hz ripple (~5 mV p-p).

Best 73 de Bent/OZ6BL

---

## 103. Re: DSP-93 Loader for Linux

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 29 Mar 1995 07:42:46 -0600  
To: j.d.melton.slh0613@oasis.icl.co.uk  
Cc: dsp-93@tapr.org  
Message-ID: <ab9f11e90f021004d565@[204.181.160.10]>  
Rendered body type: text/plain

>Ron, I have an outstanding order for the DSP-93 in the next  
>build. Do you know of anyone using the DSP-93 with Linux,  
>especially a loader? I currently have a TI TMS evaluation board  
>that I have been playing with and have a loader working for it.  
>Is the interface for the DSP-93 the same? I am prepared to help  
>develope software for Linux. -- 73's, John (g0orx@amsat.org)

Its better to send your comments to dsp-93@tapr.org. Better chance of  
getting a response.

Don't know of any Linux support. All you really need to run existing  
software is a simple loader (I assume the source can be made available) and  
a terminal emulator. I don't know about the TI TMS evaluation board.  
Perhaps someone else can comment.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 104. Re: [DSP-93:538] +- 2.2 V p-p encore

From: Roy Welch <rdw@crl.com>  
Date: Wed, 29 Mar 1995 06:53:30 -0800 (PST)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950329064543.26206C-100000@crl3.crl.com>  
Rendered body type: text/plain

Bob, do you think he should remove U202 and U209 and then jumper across the  
sockets to see if that removes the DC bias? I've forgotten which pins.  
Is it u202 pins 3 to 7 and U209 pins 5 to 7?  
73, Roy

On Wed, 29 Mar 1995, Bent Bagger wrote:

> I have done as suggested by Roy Welch <rdw@crl.com>:  
>  
>  
> > I'm not sure, but I suggest looking at the DC voltage on U208-8  
> > (REF). Seems like it was around 3.2 volts, but not sure . Check it  
> > for stability. Also mine cleared up after resoldering C208, the  
> > bypass for that pin. Also push the U208-8 pin while the chip is in  
> > the socket and see if any fluxuations are seen. The voltage on this  
> > pin should be very stable.  
>  
> The voltages on U208-8 measures 3.03 V and it is stable as a rock. It  
> is also vere 'pure' with only a slight trace of 50 Hz ripple (~5 mV  
> p-p).  
>  
>  
> Best 73 de Bent/OZ6BL  
>

---

## 105. Re: [DSP-93:537] Ethernet interface

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Wed, 29 Mar 1995 13:05:45 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503291905.NAA28448@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to Kohjin Yamada:

>  
> I was told you have been designing an Ethernet interface for the DSP-93.  
> Can I ask (about) when it will be available for us?  
>  
Hello Kohjin,

Yes, I have been working on an interface card for some time now. I have the  
hardware working. The board is added to the stack making a total of three in  
my prototype. I have been working on the software or firmware to test it  
out. Still developing network interface routines.

I need to be sure the overhead required to support interface on the ethernet is not a burden for the DSP applications. This means I must have routines which only provide the most basic network interface with the least number of TMS320C25 cycles. Some of the modem routines really do not have many cycles to spare.

Sorry but I would not dare commit to a time on when it will be available. If I can get it to a point that TAPR wants to produce the interface then it will take a few months just to collect parts for the kit.

What applications would you like to use an ethernet interface? If you have something special in mind it might be nice to consider.

I have already had an occasion to want to use three DSP-93s in a demo. Three serial ports on a PC are a problem so an ethernet interface would have helped me.

Hope this helps you understand the current citation and I will report progress from time to time.

Bob Stricklin, N5BRG

---

## 106. Re: [DSP-93:539] Re: DSP-93 Loader for Linux

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Wed, 29 Mar 1995 13:18:04 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503291918.NAA01065@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

John, The c code for a program called dspload.c is distributed with the kit. You can use this to build your own Linux loader for the DSP-93. The TI eval loader is not compatible.

Bob, N5BRG

According to Ronald G. Parsons:

```
>
> >Ron, I have an outstanding order for the DSP-93 in the next
> >build. Do you know of anyone using the DSP-93 with Linux,
> >especially a loader? I currently have a TI TMS evaluation board
> >that I have been playing with and have a loader working for it.
> >Is the interface for the DSP-93 the same? I am prepared to help
> >develop software for Linux. -- 73's, John (g00rx@amsat.org)
>
> Its better to send your comments to dsp-93@tapr.org. Better chance of
> getting a response.
>
> Don't know of any Linux support. All you really need to run existing
> software is a simple loader (I assume the source can be made available) and
> a terminal emulator. I don't know about the TI TMS evaluation board.
> Perhaps someone else can comment.
>
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>
```

---

## 107. Re: [DSP-93:542] Re: DSP-93 Loader for Linux

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 29 Mar 1995 13:33:56 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab9f660a1402100499b5@[204.181.160.10]>  
Rendered body type: text/plain

According to Bob Stricklin:

```
>
>John, The c code for a program called dspload.c is distributed with the kit.
>You can use this to build your own Linux loader for the DSP-93. The TI eval
>loader is not compatible.
```

Bob,

I searched the diskette images and I could not find dspload.c.

Mark,

Something to add to your list :-)

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 108. DSP-93 application software

From: Simon Lewis <slewis@pacsat.demon.co.uk>  
Date: Wed, 29 Mar 1995 18:21:23 GMT  
To: dsp-93@tapr.org  
Message-ID: <25@pacsat.demon.co.uk>  
Rendered body type: text/plain

Hi All

Can anyone tell me if the pc software to upload and drive the DSP-93 lives on the FTP server for tapr?

If not where does it live!

```
+-----+
| 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland |
| Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk |
| AMSAT - UK Member 4282 **** SUPPORT YOUR LOCAL AMSAT GROUP **** |
+-----+
```

---

## 109. Question from ZP6XD

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 29 Mar 1995 14:27:29 -0600  
To: dsp-93@tapr.org  
Message-ID: <ab9f703e15021004ff2b@[204.181.160.10]>  
Rendered body type: text/plain

This was on K0-25. If any of you wish to respond, I'll forward the answers to him.

Ron

```
=====
From: ZP6XD
To: ALL
Subject: DSP-93
Keywords:

To : DSP-93
From: ZP6XD
Time: 133018UTC
Date: 29 Mar 1995

Hello ALL,
```

I would like the REAL truth about the DSP-93. Is it easy to build? Can I buy one already assembled...ready to run? How many people are actually USING it ON the 9600 bps sats...and how many have tried and failed to make it work? How many people are having problems with it? Please - I want candid answers and opinions!

Thanks! 73 - Dean

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 110. Re: [DSP-93:542] Re: DSP-93 Loader for Linux

From: bonzai!hank@aluxpo.att.com (Hank Pustarfi)  
Date: Wed, 29 Mar 1995 15:25:08 -0500 (EST)  
To: tapr.org!dsp-93@aluxpo.att.com  
Message-ID: <m0ru4If-0005TqC@bonzai.cnet.att.com>  
Rendered body type: text/plain

Bob;

The c code for dspload is not on either disk 1 or 2 of the kit that I received? Only .exe and .cfg are on the disks. It sure could would save re-inventing the 'wheel' if it were available.

Hank, K3WGV

According to Bob Stricklin:

>\_\_ John, The c code for a program called dspload.c is distributed with the kit.  
>\_\_ You can use this to build your own Linux loader for the DSP-93. The TI eval  
>\_\_ loader is not compatible.

>\_\_ Bob, N5BRG

>\_\_ According to Ronald G. Parsons:

>\_\_ >  
>\_\_ >Ron, I have an outstanding order for the DSP-93 in the next  
>\_\_ > build. Do you know of anyone using the DSP-93 with Linux,  
>\_\_ > especially a loader? I currently have a TI TMS evaluation board  
>\_\_ > that I have been playing with and have a loader working for it.  
>\_\_ > Is the interface for the DSP-93 the same? I am prepared to help  
>\_\_ > develop software for Linux. -- 73's, John (g0orx@amsat.org)  
>\_\_ >  
>\_\_ > Its better to send your comments to dsp-93@tapr.org. Better chance of  
>\_\_ > getting a response.  
>\_\_ >  
>\_\_ > Don't know of any Linux support. All you really need to run existing  
>\_\_ > software is a simple loader (I assume the source can be made available) and  
>\_\_ > a terminal emulator. I don't know about the TI TMS evaluation board.  
>\_\_ > Perhaps someone else can comment.  
>\_\_ >  
>\_\_ >  
>\_\_ > Ron W5RKN  
>\_\_ >  
>\_\_ > also:  
>\_\_ > w5rkn@amsat.org  
>\_\_ >  
>\_\_ >  
>\_\_ >

--

Hank Pustarfi

k3wgv@k3wgv.ampr.org

hank@aluxpo.att.com

"It is always the adventurers who accomplish great things." -- Montesquieu

---

## 111. Re: [DSP-93:540] Re: +- 2.2 V p-p encore

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Wed, 29 Mar 1995 22:44:52 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503300444.WAA17188@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

According to Roy Welch:

>  
> Bob, do you think he should remove U202 and U209 and then jumper across the  
> sockets to see if that removes the DC bias? I've forgotten which pins.  
> Is it u202 pins 3 to 7 and U209 pins 5 to 7?  
> 73, Roy

You can eliminate offset by doing this. Only need to do it on U202 for the input signal. May also remove U203 and U201 and strap one selection on these chips as well to eliminate offset here for testing. See schematic for the pins you want to jump.

If you just remove U203 jump 3 to 1 and 5 to 7. This will yield no gain.

Bob, N5BRG

---

## 112. Re: [DSP-93:546] Re: DSP-93 Loader for Linux

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Wed, 29 Mar 1995 22:46:49 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503300446.WAA17464@Gayle-Gaston.tenet.edu>

Rendered body type: text/plain

Will put the code for dspload.c on the ftp site tapr.org by Saturday.

Bob, N5BRG

---

### 113. Re: [DSP-93:548] Re: DSP-93 Loader for Linux

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 30 Mar 1995 07:56:20 -0600  
To: dsp-93@tapr.org  
Message-ID: <aba066b418021004e6d3@[204.181.160.10]>  
Rendered body type: text/plain

>Will put the code for dspload.c on the ftp site tapr.org by Saturday.  
>  
>Bob, N5BRG

Have you looked at the problem with loading code higher than 3FFFh. My guess is that the address variable needs to be declared long (32 bits)? All the integers in the Mac version are by default "long" and I used the same code but do not have the 3FFF problem.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 114. DSP-93 application software

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 30 Mar 1995 09:16:50 -0500  
To: dsp-93@tapr.org  
Message-ID: <9503301408.AA00741@camel.campbell.edu>  
Rendered body type: text/plain

Simon,

Look for the diskette images to be uploaded to the dsp93 subdirectory of the ftp.tapr.org site sometime today. I have them ready, but left them at home.

What I will post is almost exactly what went out with the first shipment of kits. The main difference is that the Macintosh Software has been updated to reflect the most recent version. Other than that, the disk images are the same.

I will be releasing the second general diskette set at a time closer to the shipment of the second round of kits. This release will have more changes, but the basic core of programs will be very similar.

I will send a message indicating that the diskettes are uploaded. I had trouble with my phone connection last nite and could not get them completely uploaded.

>Hi All  
>  
>Can anyone tell me if the pc software to upload and drive the DSP-93 lives on  
>the FTP server for tapr?  
>  
>If not where does it live!  
>  
>  
>+-----+  
>| 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland |  
>| Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk |  
>| AMSAT - UK Member 4282 \*\*\*\* SUPPORT YOUR LOCAL AMSAT GROUP \*\*\*\* |  
>+-----+  
-----

Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

### 115. Re: DSP-93 Application Software

From: Simon Lewis <slewis@pacsat.demon.co.uk>  
Date: Thu, 30 Mar 1995 17:21:28 GMT  
To: dsp-93@tapr.org  
Message-ID: <26@pacsat.demon.co.uk>  
Rendered body type: text/plain

(In reply to your message dated Thursday 30, March 1995)  
Hi Mark

Thanks for that, I will download those sometime over the weekend at the cheap rate period on the landline hi!

I am just about ready to buy a DSP-93 kit - but I have just decided to change jobs so I am sorta looking to hold off on buying one just yet, but the idea behind the DSP-93 is great and just what I'd be interested in for satellite work.

One particular application that I would be looking for is the decoding of the high speed TLM from the SCOPE camera project on Phase 3D. Thats running at 64kb but I have other applications I'd also like to look into , like ACARS decoding.

Thanks for the info anyway

```
+-----+
| 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland |
| Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk |
| AMSAT - UK Member 4282 **** SUPPORT YOUR LOCAL AMSAT GROUP **** |
+-----+
```

---

## 116. Re: [DSP-93:549] Re: DSP-93 Loader for Linux

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Thu, 30 Mar 1995 12:34:20 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199503301834.MAA20609@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain

According to Ronald G. Parsons:

>  
> Have you looked at the problem with loading code higher than 3FFFh. My  
> guess is that the address variable needs to be declared long (32 bits)? All  
> the integers in the Mac version are by default "long" and I used the same  
> code but do not have the 3FFF problem.

Yes I did look at that. Also made the variable long but as I recall it was still having some problems. Plan is to look at it some more and clean up the code some before posting.

Bob, N5BRG

---

## 117. [DSP-93:536] RE: FTPMAIL

From: wtb@partyline.org  
Date: Thu, 30 Mar 95 21:29:59  
To: dsp-93@tapr.org  
Message-ID: <9503302129.0U7BL00@partyline.org>  
Rendered body type: text/plain

Bob -  
Received the disk on 3/29/95. Thanks.  
Bill N0LIK

---

## 118. first shipment diskette set posted (finally)

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 31 Mar 1995 11:55:27 -0500  
To: dsp-93@tapr.org  
Message-ID: <9503311647.AA07623@camel.campbell.edu>  
Rendered body type: text/plain

Hello All:

I have just finished posting the images of diskettes 1 and 2 onto the dsp93 subdirectory on the anonymous site of ftp.tapr.org. Look under diskettes/disk1 and diskettes/disk2. Basically, this is a very slightly modified version of the diskettes that shipped with the first production run of the TAPR/AMSAT DSP-93 kit (new Mac interface update, MacDSP ver 1.21). Therefore, I didn't even change the names of the two big .zip files.

An obvious question: Should users be sure to get this posting?



My suggestion? == NO == If you got the disks in your kit, you shouldn't bother to get this posting of disks, unless you need the "new and improved" Macintosh terminal program. (which by the way is still posted in the upload subdirectory on the anonymous site and can be downloaded from there in much less time).

I suggest that current users/builders of the DSP-93 wait until the "official" release of the next disk set occurs. This release should shortly precede the second shipment of kits.

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 119. Yet another HF FSK modem

From: Mills@huey.udel.edu  
Date: Fri, 31 Mar 95 16:19:38 EST  
To: dsp-93@tapr.org  
Message-ID: <9503311619.aa27035@huey.udel.edu>  
Rendered body type: text/plain

Folks,

For those of you who might be interested, I have placed two files in the pub/ntp directory on host louie.udel.edu: modem.zip and modem.tar.Z. The files, which are available via anonymous ftp, contain the same information in two popular formats, which should be obvious from the file extensions. An extract from the readme.txt file follows:

FSK modem for HF RTTY

This program implements a 45/50/75/100-baud FSK modem for HF Baudot asynchronous signalling. It uses Butterworth and matched filters, soft-decision detection, maximum a-priori (MAP) estimation and Viterbi decoding. In case of continuous signalling, it can operate in a synchronous mode using a phase-lock loop to flywheel through momentary carrier fades. The predetection design and many of the operator features were inspired by the Dovetron TU of long ago, but implemented in DSP, rather than analog form. The postdetection design, including MAP estimation, Viterbi decoding and synchronous mode were inspired by a LSI-11 program also of long ago. If this thing can't pull RTTY signals from the muck, nothing can.

Currently, the modem operates as a regenerator. In operation, an ordinary TNC is connected to the speaker jack of the DSP93 and used to demodulate and decode the regenerated signal. The regenerated tones can also be used to drive a transmitter, if useful. The tones are designed to match the AEA PK-232 in either narrow shift (WIDE OFF) or wide shift (WIDE ON). In narrow shift mode, the mark tone is 2125 Hz and space 2295 Hz. In wide shift mode, the mark tone is 1275 Hz and space 2125 Hz. Presently, the narrow shift tones are used for input shifts of 170 Hz, while the wide shift tones are used for all other input shifts. The baud rate of the output signal is equal to that of the input signal.

...

A speaker can be connected to the output, along with the external TNC. The d command can be used to select various signals generated in the software, as detailed below. In addition, a DC-coupled scope can be connected directly to the AIO analog output. With practice, signals can be tuned in accurately by watching the LEDs and listening to the various signals on the speaker. A word of caution, however; this thing is really very selective, especially when the predetection matched filter is in use, where it needs to be tuned to within 10 Hz for optimum results.

The program can operate in two modes, asynchronous and synchronous, depending on signal quality and operator preference (s command). In asynchronous mode, each character is decoded separately. In synchronous mode, the program measures the intercharacter spacing and continuously adjusts the sample phase for optimum decoding without requiring a start-bit check. This improves performance, especially under fading conditions when valid character framing is lost, since the decoder simply scraps the garble without losing valid framing for subsequent characters. The signal quality is determined from the Viterbi distance, called the

autostart signal, which is integrated using a relatively long time constant. When this signal exceeds a threshold, LED 4 is turned on. If LED 4 flashes with LED 7, the program is operating in asynchronous mode; when it is on continuously, the program is operating in synchronous mode.

There are two input bandpass FIR filters implemented in this program, one for narrow (170 Hz) shift, the other for wider shifts to 850 Hz. The discriminator is implemented as a set of synchronous lowpass filters, one for each of the mark and space signals. These are selected using the `m` command for various shifts. Butterworth IIR lowpass filters can be used for quasi-linear response. In this case, postdetection matched filters are used in both the mark and space channels, both to optimize the transient response and as an interpolation filter. Alternatively, synchronous predetection matched filters can be used for greater selectivity. In this case postdetection filters are not necessary. All matched filters are matched to the baud rate and have bandwidths approximately equal to the reciprocal of the baud rate. In the case of the synchronous predetection matched filter, this makes tuning very sensitive, especially at the lower baud rates, and requires, for example, an adjustment for TNCs with compromise 200-Hz shift.

...

Dave, W3HCF

---

## 120. Observations on program design

From: Mills@huey.udel.edu  
Date: Fri, 31 Mar 95 16:21:44 EST  
To: dsp-93@tapr.org  
Message-ID: <9503311621.aa27046@huey.udel.edu>  
Rendered body type: text/plain

Folks,

In the development of the HF FSK modem mentioned in a previous message, I learned a great deal about the feeding habits of the DSP93 and TMC320C25. The program is big, sophisticated and exercises just about every feature of the machine. Before I say anything else, I must emphasize that the support software, including the D93WE program, assembler and supporting documentation, is wonderful. Without this software, I would not even have attempted this project.

In the development process, I discovered several things that may simplify and expand programming technique relative to the techniques I observe in the DSP93 software distribution. This is not to say they are wrong or detract from the intended function in any way. It is to say there may be techniques other than illustrated in the TMS320 documentation from TI or in the DSP93 distribution that make implementing large, complex programs much easier.

The software designs illustrated in the DSP93 programs do almost everything in relatively large interrupt routines, while the main program spins in a loop with interrupts enabled. Like probably every other developer, when I used this approach and kept adding more and more code, I eventually ran out of CPU cycles between interrupts. More precisely, one particular code path exhausted those cycles. The usual fix for this is to add more buffering, but not to change the overall design where most everything is done with interrupts disabled.

Like many similar designs, mine has some predetection processing, a detector and a good deal of postdetection baseband processing. The postdetection processing is done at a lower rate than predetection processing, and can usually be amortized over several receive or transmit interrupts, as illustrated in the TI documentation. Unfortunately, the juggling act to equalize the code paths on each interrupt to avoid overrunning the receive or transmit buffers is a true pain.

The aspirin for this pain turned out to be a radical departure from the interrupt-intensive approach. The secret is understanding that most applications can operate with a modest amount of fixed delay, but the average code path in CPU cycles per interrupt cannot exceed the interval between interrupts. In the original design, the limitation is the maximum code path, not the average, which is a lot harder to control.

In this departure, everything runs with interrupts enabled, with the interrupt routines and main program coupled using a circular buffer. In my design, the interrupt buffer is a circular structure indexed by `AR6`

and AR7. AR6 is used only by interrupt routines. The receive interrupt routine stores the sample at the location pointed to by AR6 and then increments AR6 in the same instruction. The transmit interrupt routine loads the sample at AR6, which is the oldest in the circular buffer. The main program loops until AR7 is not equal to AR6, then loads the sample found at AR7, which is the oldest sample not yet processed. The program loads the output at AR7 and then increments AR7 in the same instruction. Since input and output interrupts are synchronous, no data are lost or duplicated and the output is delayed from the input by the size of the buffer, in my design 100 samples or 12.5 ms.

Having revised the program to operate in this way, I raked out all the multi-cycle management code and linearized the whole program, tossing out great gobs of code and reclaiming precious temporaries in the process. I was able to add a lot of new code without exhausting the cycles and the code is much simpler and easier to modify. One way of describing the result is that the overall average code path must be less than 125 usec, but the peak code path can be as much as 12.5 ms.

There is, however, one minor annoyance. During configuration, the AIO chip imposes unreal latency times for the configuration data. The approach used in the DSP93 modems is to use inline code and real tiny interrupt routines. Unfortunately, I was unable even after much effort to devise a transmit interrupt routine that would both satisfy configuration latency requirements and save enough machine state to make the routine transparent to the main program. My solution was to provide two routines and switch from one to the other on-the-fly by altering the transmit-interrupt branch instruction at the beginning of the program. I find this solution ugly to the extreme max and would welcome an alternative that works.

Dave, W3HCF

---

## 121. Source for experimental boards?

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 31 Mar 1995 16:44:37 -0600  
To: dsp-93@tapr.org  
Message-ID: <aba22db120021004bc8f@[204.181.160.10]>  
Rendered body type: text/plain

To: W5RKN  
Subject: Source for experimental boards?  
Keywords: DSP-93

-----  
To: W5RKN  
From: DL3DA  
Time: 200558 UTC  
Date: 31MAR95  
Title: Source for experimental boards?

Hello Ron,

corrected diagrams from TAPR arrived today. As the TNC inside DSP-93 is ok now and everything is working I would like to remove it and make some experiments. Unfortunately the size of the boards is rather unusual for us here.. All experimental boards (0.1" with drilled pads) are euro size 100x160mm. Do you know any source in U.S. where I get the right size?

73, Karl DL3DA in Goettingen

ÿP.S. The assembler AS V1.4 I recently mentioned is working ok, but assembles slower than TASM.

Ron W5RKN

also:  
w5rkn@amsat.org

# April 1995

Original source file: dsp.9504

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/dpsig/mail\\_archive/dsp.9504](http://ftp.tapr.org/tapr_history/SIG_Archives/dpsig/mail_archive/dsp.9504)

## 1. Re: Data Disks - Downloaded Thanks

From: Simon Lewis <slewis@pacsat.demon.co.uk>  
Date: Sun, 2 Apr 1995 11:09:21 GMT  
To: dsp-93@tapr.org  
Message-ID: <37@pacsat.demon.co.uk>  
Rendered body type: text/plain

(In reply to your message dated Friday 31, March 1995)  
Thanks Mark

Ive downloaded them now and have both disks ok

Q. Do you get many problems with back .ZIP files after FTP'ing over the net?

Ive downloaded the diags for the DSP93 and those disks and had snags with bad .ZIP files after FTP'ing them. Ideas?

--  
+-----+  
| 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland |  
| Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk |  
| AMSAT - UK Member 4282 \*\*\*\* SUPPORT YOUR LOCAL AMSAT GROUP \*\*\*\* |  
+-----+

## 2. Re: [DSP-93:558] Re: Data Disks - Downloaded Thanks

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sun, 02 Apr 1995 15:18:25 +0000  
To: dsp-93@tapr.org  
Message-ID: <9504021514.AA13943@camel.campbell.edu>  
Rendered body type: text/plain

You're welcome, Simon.

As for "bad" .zip files, make certain you issue a "bin" command to tell the tapr system that you want to do a binary transfer BEFORE you do the "get" command. If you don't tell both the local and remote systems to do a binary transfer, sometimes you can end up doing an ascii transfer that doesn't transfer the file correctly. What you will get is an error when you try to unzip the files that says something like "errors in .zip file, use zipfix".

Hope that helps?

>(In reply to your message dated Friday 31, March 1995)  
>Thanks Mark  
>  
>Ive downloaded them now and have both disks ok  
>  
>Q. Do you get many problems with back .ZIP files after FTP'ing over the net?  
>  
>Ive downloaded the diags for the DSP93 and those disks and had snags with bad  
>.ZIP files after FTP'ing them. Ideas?  
>  
>  
>--  
>+-----+  
>| 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland |  
>| Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk |  
>| AMSAT - UK Member 4282 \*\*\*\* SUPPORT YOUR LOCAL AMSAT GROUP \*\*\*\* |  
>+-----+  
>  
>  
>

Mark L. Hammond [KC4EBR]

## 3. DSP lockup

From: dmedley@dconcepts.com  
Date: Sun, 02 Apr 95 13:18:09 EST  
To: dsp-93@tapr.org  
Message-ID: <9504021318.D0791V1@dconcepts.com>  
Rendered body type: text/plain

I have just returned from a two months stay in Australia and New Zealand. I took a DSP-93 with me but did not have time to test it before I left. However, when visiting Ian, ZL1A0X, we had the opportunity of trying it out. It worked just fine on 1200 baud packet for about 15 minutes and then it locked up. Nothing we could do would make it come to life again. So we left it for a while and then tried it again. Still would not boot. So we assumed something had gone south and went on to playing with his unit which is working well.

When I returned to Tucson on Thursday I plugged the DSP in with the new wall transformer which was waiting here and believe it or not the unit booted right up. I wonder if anyone else has had a similar experience?

Dave KI6QE/VK2IMJ

---

#### 4. workshop.zip & dspload.c

From: Bob Stricklin <bstrick@tenet.edu>  
Date: Mon, 3 Apr 1995 22:28:47 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199504040328.WAA23896@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

With Marks help we have now posted two files:

The files workshop.zip and dspload.c are posted to ~tapr/dsp93/upload subdirectory on ftp.tapr.org. These files are now available by anonymous login.

I would not download the Workshop.zip file unless you want the slides to review. All the other information is on the distribution disk which came with the DSP-93. The workshop.zip files do include everything required to write dsp code for the DSP-93. I set them up this way for people that want to work with the code before they purchased a kit.

If you want to recompile dspload.c you will have to make some function changes to fit the library of your compiler.

Bob, N5BRG

---

#### 5. RE: [DSP-93:561] workshop.zip & dspload.c

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Tue, 4 Apr 95 13:04:49 BST  
To: dsp-93@tapr.org  
Message-ID: <9504041204.AA01602@getafix.oasis.icl.co.uk>  
Rendered body type: text/plain

Bob, Thanks for uploading dspload.c. I tried to get it using Netscape (running on Linux), but get an error back saying the file is not a directory (also for workshop.zip). I can get the README files OK, and have successfully got the disk zip files. Anyone have any ideas?

Thanks, John Melton, g0orx/n6lyt

---

#### 6. Re: [DSP-93:562] RE: workshop.zip & dspload.c

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 4 Apr 1995 08:48:09 -0500  
To: dsp-93@tapr.org  
Message-ID: <9504041339.AA02228@camel.campbell.edu>  
Rendered body type: text/plain

John,

Why don't you try a plain vanilla ftp session from your Linux box to ftp.tapr.org? That should get you the files just fine.

The file IS NOT a directory. So, Netscape is right in that regard.

Netscape can be funny when it comes to ftp and telneting stuff. Sometimes the old ways are still the best....

It IS odd that you got the zipped disk files okay.....I will look at the protection of the newest files to be sure they are "readable" to the public.

>Bob, Thanks for uploading dspload.c. I tried to get it using  
>Netscape (running on Linux), but get an error back saying the  
>file is not a directory (also for workshop.zip). I can get the

>README files OK, and have successfully got the disk zip files.  
>Anyone have any ideas?  
>Thanks, John Melton, g0orx/n6lyt  
-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 7. protections fixed

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 4 Apr 1995 10:01:02 -0500  
To: dsp-93@tapr.org  
Message-ID: <9504041452.AA02574@camel.campbell.edu>  
Rendered body type: text/plain

Sorry Gang,

I had a short between the ears. I had the protections wrong.....argh.....keeping up with both ftp sites that are nearly identical is a drag...then add too many distractions at work.

Anyhow, sorry for the confusion. The workshop.zip and the dspload.c files should now be readable by the universe and all anti-parallel universes, too  
=)

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 8. RE: [DSP-93:563] RE: workshop.zip & dspload.c

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Tue, 4 Apr 95 16:02:29 BST  
To: dsp-93@tapr.org  
Message-ID: <9504041502.AA26499@getafix.oasis.icl.co.uk>  
Rendered body type: text/plain

Mark, for security reasons we have to go through a proxy server using Netscape, so I have no other alternative. I suspect that the file permissions may be wrong, as I do not have any trouble with other files on ftp.tapr.org, or on any other site that I have used.

Thanks, John Melton g0orx/n6lyt

---

## 9. Dave's HF FSK modem

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 05 Apr 1995 01:36:51 +0000  
To: dsp-93@tapr.org  
Message-ID: <9504050131.AA05909@camel.campbell.edu>  
Rendered body type: text/plain

Dave,

I just got the code by anonymous ftp. No sweat.

This looks like one dandy piece of code! Now- an innocent (read that as "dumb") question - does this code decode a lot of the RTTY that the PK-232 can't identify or print? I have my PK-232 at work...guess I need to drag that old beast home to check it out! I remember hearing quite a bit of baudot sounding signals, but it would complain about them and not print them.

In other words, your modem looks like a \*very\* versatile modem. Thanks for your efforts! I will let you know of my experiences....

>Folks,

>

>For those of you who might be interested, I have placed two files in the >pub/ntp directory on host louie.udel.edu: modem.zip and modem.tar.Z. The >files, which are available via anonymous ftp, contain the same

```
>information in two popular formats, which should be obvious from the
>file extensions. An extract from the readme.txt file follows:
>
>FSK modem for HF RTTY
>
>This program implements a 45/50/75/100-baud FSK modem for HF Baudot
>asynchronous signalling. It uses Butterworth and matched filters, soft-
>
>...
>
>Dave, W3HCF
>
>
```

Mark L. Hammond [KC4EBR]

---

## 10. Re: [DSP-93:566] Dave's HF FSK modem

From: Mills@huey.udel.edu  
Date: Tue, 4 Apr 95 22:28:32 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9504042228.aa15364@huey.udel.edu>  
Rendered body type: text/plain

Mark,

Thanks for the words. In its present form, the modem is quite dumb - all it does is regenerate Baudot signals buried in a ton of noise. My near-term goal is to crank the high power algorithms loose on AMTOR Mode B, where the coding gain can be huge. The thing worked gangbusters on the recent RTTY contest, but I found a couple of bugs (first of` probably many). The p (pulse gate) command doesn't work (easy to fix) and, more ominously, thing program crashes occasionally in heavy going, like very noisy conditions. I also learned that defaulting the limiter on for both matched filter and Butterworth filters is probably a good idea; otherwise, tuning the thing can be a drag. I found by flicking the output between monitor-input and generate-AFSK, I could use the PK232 tuning indicator to center the tones. More as things develop.

Dave

---

## 11. D93WE Version 1.1

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)  
Date: Thu, 6 Apr 95 07:54:15 CDT  
To: dsp-93@tapr.org  
Message-ID: <9504061254.AA00767@eagle.aud.alcatel.com>  
Rendered body type: text/plain

I have uploaded version 1.1 of D93WE to ftp.tapr.org. It is located in /tapr/dsp93/upload/d93r11.zip

The .ZIP file contains D93WE.EXE and D93WE.HLP, all the other files from version 1.0 are still used, only those two files changed. You may want to rename your existing version 1.0 files to \_D93WE.EXE and \_D93WE.HLP, respectively, then just copy the two new ones into your directory.

This way you can revert to the old version if you want to. The D93WE.INI file is not changed.

Changes in version 1.1:

1. The terminal window is cahnged from variable-pitch font to a fixed-pitch font so everything lines up nicely now. Hard to figure out how to do it, but once uncovered, it was only 2 lines of code.
2. Program download bug fixed. It will now download at addresses greater than 3FFFh.
3. Changed keyboard exit from ALT-F-E to ALT-F-X (matches other windows applications).
4. The scope, function generator, spectrum analyzer and memtest routines are loaded from the DSP-93 EPROM, rather than downloaded from disk, so they start up much more quickly.
5. The program download now sends an 'R' before starting the download. This means that download can be started while an application is running, and it will get killed then the new download

will start. This only works with \*some\* applications (those that recognize an 'R' to reset). This saves typing an R on the keyboard.

6. The .EXE file is much smaller (about 1/2 the size) due to some improved linker settings.

Please send me any bug reports for V1.1.

- Tom, N5EG

```
-----+-----
Tom McDermott | "All opinions expressed
Alcatel Network Systems, Inc. | are my own, and do not
mcdermot@aud.alcatel.com | represent those of Alcatel
[ICC'96 Technical Program Secretary] | Network Systems, Inc."
[June 23-27, 1996, Dallas, Tx.] |
-----+-----
```

---

## 12. [DSP-93:568] D93WE Version 1.1 -Reply

From: PAUL SHUCH <PSHUCH@pct.edu>  
Date: Thu, 06 Apr 1995 08:30:41 -0400  
To: dsp-93@tapr.org  
Message-ID: <sf83b45e.001@pct.edu>  
Rendered body type: text/plain

Tom,  
If I wore a hat, it would be off to you! Thanks for a job very well done.  
The D93WE software is a pleasure to use, and it just keeps getting  
better. Wish I could write code like that . . .  
Vy 73, Paul n6tx

---

## 13. Shipping?

From: cstampf@mhv.net  
Date: Thu, 6 Apr 95 10:41:11 PDT  
To: dsp-93@tapr.org  
Message-ID: <Chameleon.950406104227.Postmaster@cstampf.mhv.net>  
Rendered body type: text/plain

Does anyboy know when the next kit shipment will be. I thought  
it was originally scheduled for late March.

---

## 14. Re: [DSP-93:570] Shipping?

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 6 Apr 1995 16:32:22 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199504062132.QAA03449@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

Hi - it is currently looking like it will be the middle of May. We were  
shooting for the end of April (just before Dayton), but as of right now we  
are still awaiting several components....so middle of May...unless something  
major changes.

Cheers - Greg

According to cstampf@mhv.net:

```
>
> Does anyboy know when the next kit shipment will be. I thought
> it was originally scheduled for late March.
>
>
>
```

---

## 15. Spare Trakbox Pcb?

From: Simon Lewis <slewis@pacsat.demon.co.uk>  
Date: Sun, 9 Apr 1995 18:42:30 GMT  
To: dsp-93@tapr.org  
Message-ID: <53@pacsat.demon.co.uk>  
Rendered body type: text/plain

Hi All

Does anyone know of a spare trakbox pcb floating about, either a bare pcb, part  
kit or part completed project?



Im looking for one - if anyone knows the whereabouts of one

```
--
+-----+
| 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland |
| Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk |
| AMSAT - UK Member 4282 **** SUPPORT YOUR LOCAL AMSAT GROUP **** |
+-----+
```

---

## 16. SSTV App

From: deh6@po.CWRU.Edu (Donald E. Haselwood)  
Date: Sun, 9 Apr 1995 18:17:05 -0400  
To: dsp-93@tapr.org  
Message-ID: <199504092217.SAA10415@owl.INS.CWRU.Edu>  
Rendered body type: text/plain

What is the status of SSTV for the DSP-93?

I was thinking about working up a program for SSTV then I remembered that in the flier it says SSTV is one of the programs being tested. No sense in reinventing the wheel.

Don, K4JPJ

---

## 17. Re: [DSP-93:573] SSTV App

From: bstrick@plano.net (Bob Stricklin)  
Date: Sun, 9 Apr 1995 20:48:42 -0500  
To: dsp-93@tapr.org  
Message-ID: <9504100148.AA01296@dns>  
Rendered body type: text/plain  
>What is the status of SSTV for the DSP-93?

Frank, WB5IPM has demonstrated it.

>

>I was thinking about working up a program for SSTV then I  
>remembered that in the flier it says SSTV is one of the programs  
>being tested. No sense in reinventing the wheel.  
>

If I recall correctly, Frank felt the SSTV needed more work and wanted someone else to improve and polish it.

Bob Stricklin, N5BRG

---

## 18. Re: [DSP-93:574] Re: SSTV App

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 9 Apr 1995 22:33:08 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199504100333.WAA28800@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

According to Bob Stricklin:

>

> If I recall correctly, Frank felt the SSTV needed more work and wanted  
> someone else to improve and polish it.  
>

Maybe you and Frank could work together improving his code.

Greg

---

## 19. Dayton Hamvention

From: PAUL SHUCH <PSHUCH@pct.edu>  
Date: Wed, 12 Apr 1995 10:27:21 -0400  
To: dsp-93@tapr.org  
Message-ID: <sf8baafd.004@pct.edu>  
Rendered body type: text/plain

Dear DSP hackers,

I just found out I'm scheduled to give a SETI talk at Dayton Hamvention, Sunday 30 April, noon to 1 pm. I will touch on applications of DSP to interstellar communications. Please consider this a personal invitation to attend.

73, Paul n6tx

Dr. H. Paul Shuch  
Executive Director, SETI League  
n6tx@setileague.org

---

## 20. What else do I need??

From: Bob Smith <rsmith@internetMCI.COM>  
Date: Wed, 12 Apr 1995 12:31:37 -0500  
To: "dsp-93@tapr.org" <dsp-93@tapr.org>  
Message-ID: <01HP92FNJN8Y95MS2U@MAILSRV1.PCY.MCI.NET>  
Rendered body type: text/plain

-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --

Very interested in the DSP-93 - the description is a bit confusing to me -  
what else will I need besides the unit, and radio/computer cables and, of  
course, software.

Thanks alot

Bob, N3FTU.

---

## 21. Re: [DSP-93:577] What else do I need??

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 12 Apr 1995 12:35:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <abb1bf5e010210042669@[204.96.0.77]>  
Rendered body type: text/plain

>-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --

>

>Very interested in the DSP-93 - the description is a bit confusing to me -  
>what else will I need besides the unit, and radio/computer cables and, of  
>course, software.

>

>Thanks alot

>

>Bob, N3FTU.

You will need a TNC with a "standard" Modem Disconnect Header, e.g. a  
TAPR-2 clone, MFJ-1270, etc. For software, you will need a terminal  
emulator for your computer. All else is included.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 22. Re: [DSP-93:578] Re: What else do I need??

From: "Timothy W. Huster" <TIMH@s1.xetron.com>  
Date: Wed, 12 Apr 1995 14:33:04 EST  
To: dsp-93@tapr.org  
Message-ID: <1B3586A76C2@s1.xetron.com>  
Rendered body type: text/plain

Okay.. Okay...

Now, I'm lost or must have missed something!

I don't have a TAPR DSP, but I've been watching the traffic on the  
SIG for the past four months, and I thought the DSP unit was  
a standalone unit not requiring signals from an analog type TNC.  
I thought the TAPR DSP unit would process the audio from the radio and  
provide the correctly decoded bits and bytes to the computer. The  
suitable modem action being provided by downloading a modem from  
the computer. I thought I would be able to 'pitch' my "ole  
piece o' junk" analog MFJ-1270 and finally go digital.  
But, apparently, if I get the TAPR DSP unit, I'll have to still  
use my 1270 to provide some decoded stuff to the TAPR DSP UNIT  
Am I out in left field on this, or what??

> >-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --

> >

> >Very interested in the DSP-93 - the description is a bit confusing to me -  
> >what else will I need besides the unit, and radio/computer cables and, of

```

> >course, software.
> >
> >Thanks alot
> >
> >Bob, N3FTU.
>
>
> You will need a TNC with a "standard" Modem Disconnect Header, e.g. a
> TAPR-2 clone, MFJ-1270, etc. For software, you will need a terminal
> emulator for your computer. All else is included.
>
>
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>

```

## 23. Re: [DSP-93:579] Re: What else do I need??

From: rparsons@bga.com (Ronald G. Parsons)  
 Date: Wed, 12 Apr 1995 16:35:38 -0500  
 To: dsp-93@tapr.org  
 Message-ID: <abb1f64a000210040d88@[204.96.0.77]>  
 Rendered body type: text/plain

Bob,

The DSP-93, when running modem software, is a modem and does not provide the functions of a TNC. You still need a TNC to provide the HDLC framing, RS-232 interface to the computer, etc. When the DSP-93 is a modem, think of it just as you would any other add-on modem to a TNC, e.g. a G3RUH 9600 bps modem. These add-on modems attach to the Modem Disconnect Header of the TNC. A TNC to go into the DSP-93 is under development (see the latest PSR).

Of course the DSP-93 can function as many different modems for a variety of modes, HF, VHF, etc. It can also act as an audio oscilloscope, spectrum analyzer, function generator, audio processor a la W9GR. These latter applications, do not use a TNC, of course.

Ron

```

>Okay.. Okay...
>Now, I'm lost or must have missed something!
>I don't have a TAPR DSP, but I've been watching the traffic on the
>SIG for the past four months, and I thought the DSP unit was
>a standalone unit not requiring signals from an analog type TNC.
>I thought the TAPR DSP unit would process the audio from the radio and
>provide the correctly decoded bits and bytes to the computer. The
>suitable modem action being provided by downloading a modem from
>the computer. I thought I would be able to 'pitch' my "ole
>piece o' junk" analog MFJ-1270 and finally go digital.
>But, apparently, if I get the TAPR DSP unit, I'll have to still
>use my 1270 to provide some decoded stuff to the TAPR DSP UNIT
>Am I out in left field on this, or what??
>
>> -- [From: Bob Smith * EMC.Ver #b.2.5.02] --
>>
>> >Very interested in the DSP-93 - the description is a bit confusing to me -
>> >what else will I need besides the unit, and radio/computer cables and, of
>> >course, software.
>>
>> >Thanks alot
>>
>> >Bob, N3FTU.
>>
>>
>> You will need a TNC with a "standard" Modem Disconnect Header, e.g. a
>> TAPR-2 clone, MFJ-1270, etc. For software, you will need a terminal
>> emulator for your computer. All else is included.
>>

```

Ron W5RKN

also:  
 w5rkn@amsat.org

## 24. What else do I need?? / What TNC to use??

From: Bob Smith <rsmith@internetMCI.COM>  
Date: Wed, 12 Apr 1995 20:32:55 -0500  
To: "dsp-93@tapr.org" <dsp-93@tapr.org>  
Message-ID: <01HP9J8HEV9E95MSWB@MAILSRV1.PCY.MCI.NET>  
Rendered body type: text/plain

-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --

Thanks Ronald and all for your responses I do understand now. Question - can I use the MFJ 1270 1200 bd tnc - will this limit me to 1200 bd modes?

Or, is there a preferred alternative?

Thanks.

----- REPLY, Original message follows -----

Date: Wednesday, 12-Apr-95 04:49 PM

From: Ronald G. Parsons \ Internet: (rparsons@bga.com)  
To: dsp-93@tapr.org \ Internet: (dsp-93@tapr.org)

Subject: [DSP-93:580] Re: What else do I need??

Bob,

The DSP-93, when running modem software, is a modem and does not provide the functions of a TNC. You still need a TNC to provide the HDLC framing, RS-232 interface to the computer, etc. When the DSP-93 is a modem, think of it just as you would any other add-on modem to a TNC, e.g. a G3RUH 9600 bps modem. These add-on modems attach to the Modem Disconnect Header of the TNC. A TNC to go into the DSP-93 is under development (see the latest PSR).

Of course the DSP-93 can function as many different modems for a variety of modes, HF, VHF, etc. It can also act as an audio oscilloscope, spectrum analyzer, function generator, audio processor a la W9GR. These latter applications, do not use a TNC, of course.

Ron

>Okay.. Okay...

>Now, I'm lost or must have missed something!

>I don't have a TAPR DSP, but I've been watching the traffic on the

>SIG for the past four months, and I thought the DSP unit was

>a standalone unit not requiring signals from an analog type TNC.

>I thought the TAPR DSP unit would process the audio from the radio and

>provide the correctly decoded bits and bytes to the computer. The

>suitable modem action being provided by downloading a modem from

>the computer. I thought I would be able to 'pitch' my "ole

>piece o' junk" analog MFJ-1270 and finally go digital.

>But, apparently, if I get the TAPR DSP unit, I'll have to still

>use my 1270 to provide some decoded stuff to the TAPR DSP UNIT

>Am I out in left field on this, or what??

>

>> >-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --

>> >

>> >Very interested in the DSP-93 - the description is a bit confusing to me -

>> >what else will I need besides the unit, and radio/computer cables and, of

>> >course, software.

>> >

>> >Thanks alot

>> >

>> >Bob, N3FTU.

>>

>>

>> You will need a TNC with a "standard" Modem Disconnect Header, e.g. a

>> TAPR-2 clone, MFJ-1270, etc. For software, you will need a terminal

>> emulator for your computer. All else is included.

>>

Ron W5RKN

also:

w5rkn@amsat.org

----- REPLY, End of original message -----

---

## 25. Re: [DSP-93:581] What else do I need?? / What TNC to use??

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 12 Apr 1995 20:05:25 -0500  
To: dsp-93@tapr.org  
Message-ID: <abb2287c03021004d8e3@[204.181.160.70]>  
Rendered body type: text/plain

>-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --  
>  
>Thanks Ronald and all for your responses I do understand now. Question -  
>can I use the MFJ 1270 1200 bd tnc - will this limit me to 1200 bd modes?  
>  
>Or, is there a preferred alternative?  
>  
>Thanks.  
>

The MFJ 1270 will work just fine at 1200 or 9600. You have to flip the dip switch on the back panel and power off/on to change the radio baud rate (use 9600 terminal baud rate for both 1200 and 9600 radio baud).

Of course, you use different software in the DSP for 1200 PKT, 1200 PSK or 9600 FSK.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 26. HF modem/smokehunt

From: Mills@huey.udel.edu  
Date: Wed, 12 Apr 95 22:56:48 EDT  
To: dsp-93@tapr.org  
Message-ID: <9504122256.aa19509@huey.udel.edu>  
Rendered body type: text/plain

Folks,

I have updated the HF FSK modem mentioned a couple of weeks back. Turns out the "p" command didn't work properly. I fixed that, added new commands for the ultimate knob-twiddler, updated the documentation and enhanced comment ornamentation of the source. I added a gated noise squelch, carrier detect gate, autostart gate, and cleaned up some of the anti-garble code. I used it in the recent RTTY contest, where I found that, if you can barely hear the tones, the thing gives useful copy. The update is on host louie.udel.edu in the pub/ntp directory in the files modem.zip and modem.tar.Z.

During development an interesting issue arose. First, when I finished the kit and fired it up with the top cover off, there was a faint stench of burning resistor and/or circuit board, which gave me a fright. You all know what burning resistors/circuit boards smell like. I was not able to find the cause by sniffing and finger probing. When the thing seemed to work anyway and nothing seemed fried, I relaxed and assumed that the board was outgassing, which sometimes happens in new boards.

Midway in development, my rapidly growing code began behaving erratically. It would run fine for minutes to hours, and then crash. Since the monitor is anything but transparent over a reset, the cause was devilishly hard to find and I expended many hours sifting for evidence. Meanwhile, I buttoned up the unit with top cover on, after which the erratic behavior got much worse. Then I just happened to put the unit in a cool place (it was on top of a warm radio) and took the top cover off again, whereupon the erratic symptoms completely disappeared. I conclude the problem all along was temperature related.

I verified the VCC is right on the 5.00-V mark. The heat sinks are pretty warm, but that no doubt is normal. When I first checked the CPU board out, I did not notice anything (like the CPU chip) hotter than I would expect. Anybody else have this problem?

Dave, W3HCF

## 27. What TNC will work

From: kc5ejk@onramp.net (Robert Winingham)  
Date: Thu, 13 Apr 1995 01:53:34 -0500  
To: dsp-93@tapr.org  
Message-ID: <v01510102abb276eeda83@[199.1.11.115]>  
Rendered body type: text/plain

There have been several questions about TNC Modem Disconnect Headers.

A list of which TNC units have Modem Disconnect Headers and which units can be modified to provide a Disconnect Header interface would be of much help.

Some units seem to have a nice socket to make the job easy and also allow one to return the unit to regular service.

I have the Kamtronics KPC-3 and the AEA PK-96. I don't see an easy way to use the KPC-3 and it only goes to 9600 baud on the computer interface.

The traffic on the DSP-93 list has been light so could all those with a working interfaces post a note telling us the type TNC and if any special mods were needed.

Bob KC5EJK Dallas

---

## 28. TNCs - MFJ-1270C and PK-232

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 13 Apr 1995 07:03:40 -0500  
To: dsp-93@tapr.org  
Message-ID: <9504131156.AA20574@camel.campbell.edu>  
Rendered body type: text/plain

Bob,

I have used my DSP-93 on the MFJ-1270C and the AEA PK-232 (old one/no mailbox).

The easiest and cheapest route, assuming you have to buy a new TNC, would be to get the MFJ-1270C. It is plug and play - remove a few jumpers from the factory installed modem disconnect header, and plug in the DSP-93. It also supports a terminal baud rate of 19.2K, so that is good for 9600. Bad part is the little dip switches on it that must be changed to go from 1200 to 9600. I made mine a little more convenient by putting a toggle and LED on the front so I can tell what mode I have the TNC switched for.

As for my PK-232, I had used it previously with the TAPR PSK and 9600 modems. Thus, it was plug and play, too ;)

Actually, I used the TAPR modem disconnect header kit that they sell. It worked great and did not take very long to install. I do remember having to cut some traces thou...this was over 5 years ago, so I sort of forget.

The PK-232 will only use a terminal speed of 9600, so I have seen some overruns with that. Maybe the new 16550 uarts will help there, who knows.

Both units work just fine. If you can put the kit together, you can interface the TNC.

Now, I don't know if you remember, but there IS a project underway (I think?) called the TNC-95 that is a third layer to be added to the two layer sandwich of the DSP-93. Presumably, it will server as the TNC and will then provide a one box unit. Don't have any guesses about time frames for its production...sorry.

>

>The traffic on the DSP-93 list has been light so could all those with a  
>working interfaces post a note telling us the type TNC and if any special  
>mods were needed.

>

>Bob KC5EJK Dallas

-----

Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 29. Re: HF modem/smokehunt

From: kellner@usa.acsys.com (Richard G. Kellner)  
Date: Fri, 14 Apr 95 08:48:41 MDT  
To: dsp-93@tapr.org  
Cc: kellner@usa.acsys.com  
Message-ID: <9504141448.AA03134@usa.acsys.com>  
Rendered body type: text/plain

>From Mills@huey.udel.edu Wed Apr 12 22:03:37 1995  
To: dsp-93@tapr.org  
Subject: HF modem/smokehunt

... stuff deleted

During development an interesting issue arose. First, when I finished the kit and fired it up with the top cover off, there was a faint stench of burning resistor and/or circuit board, which gave me a fright. You all know what burning resistors/circuit boards smell like. I was not able to find the cause by sniffing and finger probing. When the thing seemed to work anyway and nothing seemed fried, I relaxed and assumed that the board was outgassing, which sometimes happens in new boards.

... stuff deleted

I verified the VCC is right on the 5.00-V mark. The heat sinks are pretty warm, but that no doubt is normal. When I first checked the CPU board out, I did not notice anything (like the CPU chip) hotter than I would expect. Anybody else have this problem?

Dave, W3HCF

Dave,  
Here's some earlier e-mail I sent out:

I received the replacement transformer for the DSP-93 kit. It was in a box that said Jameco, 9VAC 1500ma. The transformer itself is also labeled for 9VAC 1500ma. However, when I tested board #1 with no ICs for a +5 DC test, there was no +5V. Looking a little further, there was not 9V AC from the transformer. Putting it on a scope, it turns out that that transformer puts out 24V DC! It must have an output cap in it also, because it holds 24VDC when power is removed, until the cap drains down.

I lucked out because when I hooked up the "transformer" it reverse biased the power supply diode and I got 0 VDC out. I pointed out at the time I sent the e-mail that if you happened to pick the other polarity, it would appear to work, i.e. you would get +5 VDC out, but it would run awfully hot because the regulator would be dropping a much larger voltage.

I recommend that you (and everyone else with a DSP-93) check your 9 VAC transformer and see if it's putting out the right stuff.

73 de Rich W5RXP

---

## 30. Interface with 736

From: dmedley@dconcepts.com  
Date: Fri, 14 Apr 95 07:32:33 EST  
To: DSP-93@tapr.org  
Message-ID: <9504140732.D47915E@dconcepts.com>  
Rendered body type: text/plain

I would like to hear from anyone who has interfaced the DSP-93 with a Yaesu 736 radio particularly for 9600 baud with the microsats. Any help/advice would be welcome.  
Dave KI6QE/7

---

## 31. Re: [DSP-93:587] Interface with 736

From: rdavis@qualcomm.com (Roy Davis)  
Date: Fri, 14 Apr 1995 11:01:45 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504141801.LAA19682@qualcomm.com>  
Rendered body type: text/plain

>

>I would like to hear from anyone who has interfaced the DSP-93  
>with a Yaesu 736 radio particularly for 9600 baud with the  
>microsats. Any help/advice would be welcome.  
>Dave KI6QE/7

I haven't had time to do the lash up, but I do have the wider IF filters in hand. Yaesu parts department sells a couple different widths. I was pleasantly surprised at the low cost.

Roy WB9RKN

---

### 32. Re: [DSP-93:586] Re: HF modem/smokehunt

From: Mills@huey.udel.edu  
Date: Fri, 14 Apr 95 22:31:14 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9504142231.aa27816@huey.udel.edu>  
Rendered body type: text/plain

Rich,

Thanks for the tip. I did check the voltage and got 10.1V no load, no DC. I ran the modem program for a couple of days with the cover off; but, upon replacing the cover, the program crashed after a few minutes. Removing the cover resumed joy. My hope is that one of you guys out there will fire up my modem program and see if the apparent heat problem can be duplicated. Funny thing is, the bigger the program got, the more it seemed vulmerable to heat stroke.

Dave

---

### 33. Re: HF modem/smokehunt

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sat, 15 Apr 1995 12:40:35 +0000  
To: dsp-93@tapr.org  
Message-ID: <9504151237.AA00579@camel.campbell.edu>  
Rendered body type: text/plain

Dave,

I brought my PK-232 home - finally. I will test out the thermal situtation with your modem code in the next few days. Busy this weekend, but a few tests won't take much time....sorry for the lack of feedback thus far.

>Rich,  
>

>Thanks for the tip. I did check the voltage and got 10.1V no load, no  
>DC. I ran the modem program for a couple of days with the cover off;  
>but, upon replacing the cover, the program crashed after a few minutes.  
>Removing the cover resumed joy. My hope is that one of you guys out  
>there will fire up my modem program and see if the apparent heat problem  
>can be duplicated. Funny thing is, the bigger the program got, the  
>more it seemed vulmerable to heat stroke.

>  
>Dave  
>  
>

Mark L. Hammond [KC4EBR]

---

### 34. Re: [DSP-93:589] Re: HF modem/smokehunt

From: fperkins@onramp.net  
Date: Sat, 15 Apr 1995 07:57:15 -0500  
To: dsp-93@tapr.org  
Message-ID: <199504151257.HAA10209@ns.onramp.net>  
Rendered body type: text/plain

Dave,

I only wish I could write code that hot :-)

73 Frank

---

### 35. Re:Interface with 736

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Sat, 15 Apr 1995 10:39:11 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504151739.KAA00551@hopf.dnai.com>  
Rendered body type: text/plain



Hello Dave,

I recently tested my cabling from my DSP-93 to my FT-736. My PTT was active all the time. I have not yet had time to trouble shoot what is wrong as the rain here finally stopped so these past few weekends have been spent working outdoors. I hope to return to my cabling problem soon. But before I try to trouble-shoot my PTT problem, I want to have "testport.obj" hacked for the 736. As I'm sure you found out, the version that came on the DSP-93 disk makes our 736 frequency run away, preventing our proper testing of the PTT. Did you hack "testport.obj", or know where I can get a 736 version of that program?

We will also need a hacked PSK program as well. I have not done any assembly programming for many years, since back when you were net control on the West Coast AMSAT net and I had my Apple IIe. So I will have a lot of studying to do before I am able to hack again. I plan to do this, but for now I just want to get my DSP-93 working, and get into assembly programming later.

I did test the DSP-93 on A0-16 and K0-23 by disconnecting the PTT line and manually pressing my mic's PTT as needed, manually tuning the frequency as well. My impression is that my throughput was better than with my TAPR PSK and G3RUH modems. But I may have been biased as I was very excited to see it work at all!

Its good to see (read?) you again. Drop in and visit us on Tuesdays at 3840 Mhz if you can.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K023 and A016

---

## 36. Re: [DSP-93:592] Re:Interface with 736

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 15 Apr 1995 12:51:11 -0500  
To: dsp-93@tapr.org  
Message-ID: <abb5b6d90c0210049632@[204.96.0.46]>  
Rendered body type: text/plain

Howard,

If you need help, pointers, etc. with the 736 conversion, let me know. Since I don't have a 736 and know nothing of the specs for its PTT, up/down, etc., expect to know it's different from Icom, I haven't looked at the problems.

But I am willing to help if you can do the testing.

BTW, we desperately need someone to modify the Icom or Kenwood writeup on interfacing the transceiver to the DSP-93. I'd appreciate your help.

Ron

>Hello Dave,

>

>I recently tested my cabling from my DSP-93 to my FT-736. My PTT was active  
>all the time. I have not yet had time to trouble shoot what is wrong as the  
>rain here finally stopped so these past few weekends have been spent working  
>outdoors. I hope to return to my cabling problem soon. But before I try to  
>trouble-shoot my PTT problem, I want to have "testport.obj" hacked for the  
>736. As I'm sure you found out, the version that came on the DSP-93 disk  
>makes our 736 frequency run away, preventing our proper testing of the PTT.  
>Did you hack "testport.obj", or know where I can get a 736 version of that  
>program?

>

>We will also need a hacked PSK program as well. I have not done any  
>assembly programming for many years, since back when you were net control on  
>the West Coast AMSAT net and I had my Apple IIe. So I will have a lot of  
>studying to do before I am able to hack again. I plan to do this, but for  
>now I just want to get my DSP-93 working, and get into assembly programming  
>later.

>

>I did test the DSP-93 on A0-16 and K0-23 by disconnecting the PTT line and  
>manually pressing my mic's PTT as needed, manually tuning the frequency as  
>well. My impression is that my throughput was better than with my TAPR PSK  
>and G3RUH modems. But I may have been biased as I was very excited to see  
>it work at all!

>  
>Its good to see (read?) you again. Drop in and visit us on Tuesdays at 3840  
>Mhz if you can.  
>  
>73  
>Howard Sodja, W6SHP In the SF Bay area  
>AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
>Microsats @ K023 and A016

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 37. Re: [DSP-93:592] Re:Interface with 736

From: ljs@rain.org (L.J.Shepherd)  
Date: Sat, 15 Apr 1995 11:27:12 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504151823.LAA06897@coyote.rain.org>  
Rendered body type: text/plain

Hello Howard: Question for you,.....when you say the modem program makes the frequency "run away" which modem program are you referring to, and by "run away" do you mean continuously increment up or down in even steps ? Was the frequency change enabled via the mike click switches ? (I assume this to be the case as I don't recall any CAT port interface on the unit).

In just sitting and thinking about the code and the interface, I was having some difficulty imagining why we would need a special change in the code itself.....that is, I can see where we would need some special rig-specific interfacing for mike-click signal polarity, etc, and some level setting changes for things like tx audio and rx input level, but haven't as yet seen the need for additional changes. I have not done any interfacing either however, so the need may become apparent when I begin.

See you on Tuesday.....73, Jim K60YY

>Hello Dave,  
>  
>I recently tested my cabling from my DSP-93 to my FT-736. My PTT was active  
>all the time. I have not yet had time to trouble shoot what is wrong as the  
>rain here finally stopped so these past few weekends have been spent working  
>outdoors. I hope to return to my cabling problem soon. But before I try to  
>trouble-shoot my PTT problem, I want to have "testport.obj" hacked for the  
>736. As I'm sure you found out, the version that came on the DSP-93 disk  
>makes our 736 frequency run away, preventing our proper testing of the PTT.  
>Did you hack "testport.obj", or know where I can get a 736 version of that  
>program?  
>  
>We will also need a hacked PSK program as well. I have not done any  
>assembly programming for many years, since back when you were net control on  
>the West Coast AMSAT net and I had my Apple IIe. So I will have a lot of  
>studying to do before I am able to hack again. I plan to do this, but for  
>now I just want to get my DSP-93 working, and get into assembly programming  
>later.  
>  
>I did test the DSP-93 on AO-16 and KO-23 by disconnecting the PTT line and  
>manually pressing my mic's PTT as needed, manually tuning the frequency as  
>well. My impression is that my throughput was better than with my TAPR PSK  
>and G3RUH modems. But I may have been biased as I was very excited to see  
>it work at all!  
>  
>Its good to see (read?) you again. Drop in and visit us on Tuesdays at 3840  
>Mhz if you can.  
>  
>73  
>Howard Sodja, W6SHP In the SF Bay area  
>AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
>Microsats @ K023 and A016  
>  
>  
>

---

### 38. Re: [DSP-93:594] Re:Interface with 736

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 15 Apr 1995 15:03:18 -0500

To: dsp-93@tapr.org  
Message-ID: <abb5d54c0d021004bdb6@[204.96.0.46]>  
Rendered body type: text/plain

>Hello Howard: Question for you,.....when you say the modem program makes  
>the frequency "run away" which modem program are you referring to, and by  
>"run away" do you mean continuously increment up or down in even steps ?

Testport may cause the frequency "run away" on any transceiver as the  
up/down lines are active for some period of time which may be greater than  
the "typomatic" interval (for those of you that remember the old electric  
typewriters). On the 736 (I believe) some lines a "backwards" and thus  
"active" when the LED is off rather than when it is on. Thus those lines  
are "active" most of the time on the "backwards" transmitters.

>In just sitting and thinking about the code and the interface, I was having  
>some difficulty imagining why we would need a special change in the code  
>itself.....that is, I can see where we would need some special  
>rig-specific interfacing for mike-click signal polarity, etc,

Yes, that is where the differences for the 736 come in. The code as tested  
for Icom and Kenwood may have the polarity "backwards" for Yaesu. If  
changes in the code can be made by conditional assembly (see Gain and Port  
in PKT.ASM) then we need to maintain only one source code file that works  
with any transceiver.

>See you on Tuesday.....73, Jim K60YY

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 39. Re: [DSP-93:589] Re: HF modem/smokehunt

From: fperkins@onramp.net  
Date: Sat, 15 Apr 1995 22:12:57 -0500  
To: dsp-93@tapr.org  
Message-ID: <199504160312.WAA16110@ns.onramp.net>  
Rendered body type: text/plain

April 15, 1995

Re: Overheating DSP-93

Hi Dave,

My favorite way to generate smoke on a newly-built PCB is to put a  
tantalum capacitor in backwards. This makes a nice burning smell every  
time. You might want to look at your tantalums (or any type of polarized  
caps) one again.

As I recall, Bob has 0.22 ohm resistors on the outputs of the 5 Vdc  
regulators. Have you looked across these when your DSP-93 starts acting  
up to see if the current drain changes significantly?

I have isolated heat-related problems from time to time by spraying  
suspect components with electronic coolant. Hopefully they now make an  
ozone friendly variety of this stuff.

I really don't think you can do anything in code to "hurt" the DSP-93  
electronics. Otherwise I would have zapped mine many times.

73 Frank WB5IPM

---

### 40. Re: [DSP-93:596] Re: HF modem/smokehunt

From: Mills@huey.udel.edu  
Date: Sun, 16 Apr 95 1:00:11 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9504160100.aa01906@huey.udel.edu>  
Rendered body type: text/plain

Frank,

I did check the drop across the 0.22-Ohm resistors and found what would  
be expected. The voltage at the ICs is 5.0VDC +/-0.01VDC. Close enough  
for Government work, as we say.

## 41. 736R lines to check

From: hammond@camel.campbell.edu (Mark L. Hammond)  
 Date: Sun, 16 Apr 1995 12:04:55 +0000  
 To: dsp-93@tapr.org  
 Message-ID: <9504161202.AA02895@camel.campbell.edu>  
 Rendered body type: text/plain

Howard,

Do you have your PTT and freq. up/down lines strapped correctly? They are either supposed to be strapped to ground or +5V to prevent what you describe....keying your rig forever, and "VFO runaway to infinity".

Be sure to strap and check all PTT and freq. up/down lines on both radio ports 1 and 2. The file describing the details of this is on the anonymous ftp.tapr.org site under the "updates" directory. Hope this helps?

>Hello Dave,

>

>I recently tested my cabling from my DSP-93 to my FT-736. My PTT was active  
 >all the time. I have not yet had time to trouble shoot what is wrong as the  
 >rain here finally stopped so these past few weekends have been spent working  
 >outdoors. I hope to return to my cabling problem soon. But before I try to  
 >trouble-shoot my PTT problem, I want to have "testport.obj" hacked for the  
 >736. As I'm sure you found out, the version that came on the DSP-93 disk  
 >makes our 736 frequency run away, preventing our proper testing of the PTT.  
 >Did you hack "testport.obj", or know where I can get a 736 version of that  
 >program?

>

>We will also need a hacked PSK program as well. I have not done any  
 >assembly programming for many years, since back when you were net control on  
 >the West Coast AMSAT net and I had my Apple IIe. So I will have a lot of  
 >studying to do before I am able to hack again. I plan to do this, but for  
 >now I just want to get my DSP-93 working, and get into assembly programming  
 >later.

>

>I did test the DSP-93 on AO-16 and KO-23 by disconnecting the PTT line and  
 >manually pressing my mic's PTT as needed, manually tuning the frequency as  
 >well. My impression is that my throughput was better than with my TAPR PSK  
 >and G3RUH modems. But I may have been biased as I was very excited to see  
 >it work at all!

>

>Its good to see (read?) you again. Drop in and visit us on Tuesdays at 3840  
 >Mhz if you can.

>

>73

>Howard Sodja, W6SHP In the SF Bay area  
 >AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
 >Microsats @ K023 and A016

>

>

>

Mark L. Hammond [KC4EBR]

## 42. Next Shipment Of DSP-93 Kits

From: Simon Lewis <slewis@pacsat.demon.co.uk>  
 Date: Sun, 16 Apr 1995 09:07:18 GMT  
 To: dsp-93@tapr.org  
 Message-ID: <66@pacsat.demon.co.uk>  
 Rendered body type: text/plain

When will the next shipment of kits be available?

Do I need to book a kit?

--

```
+-----+
| 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland |
| Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk |
| AMSAT - UK Member 4282 **** SUPPORT YOUR LOCAL AMSAT GROUP **** |
+-----+
```

## 43. Re: [DSP-93:599] Next Shipment Of DSP-93 Kits

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 16 Apr 1995 13:16:35 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199504161816.NAA18507@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

There are still units available for the next shipment. The remaining parts are arriving in the next two weeks and we are still aiming at shipping around May 15th.

Contact Dorothy at the office to get your order placed.

tapr@tapr.org  
fax: (817) 566-2544

Greg

According to Simon Lewis:

```
>
> When will the next shipment of kits be available?
>
> Do I need to book a kit?
>
>
> --
> +-----+
> | 73 From: Simon Lewis GM4PLM - Helensburgh - Strathclyde - Scotland |
> | Packet: GM4PLM @ GB7SAN.#78.GBR.EU Email: slewis@pacsat.demon.co.uk |
> | AMSAT - UK Member 4282 **** SUPPORT YOUR LOCAL AMSAT GROUP **** |
> +-----+
>
>
```

---

## 44. DSP-93 problem(s)

From: dmedley@dconcepts.com  
Date: Sun, 16 Apr 95 11:55:14 EST  
To: dsp-93@tapr.org  
Message-ID: <9504161155.D4352UM@dconcepts.com>  
Rendered body type: text/plain

I hope some kind soul out there can help me with a problem. I built my DSP-93 back in January and after an adventure with a blank EPROM the unit tested out OK. At this point I took it with me for an extended trip to Australia and New Zealand with the intention of showing it to anyone interested. It worked ok in a limited fashion (Test Instruments and 1200 baud packet) until I got to New Zealand and visited with Ian, ZL1AOX. While we were testing it on his set up it locked up and failed to boot, even after leaving it for a few hours.

On returning home about a week ago the unit worked for a while and repeated what had happened in New Zealand but the fault was intermittent.

By this time it had spent many many hours being bounced around in airplanes, being subjected to various airport baggage handling systems and scanners etc.

It eventually failed completely and on being dismantled the following was observed:

1. The fuse on board 1 had blown.
2. Both the +5 volt regulators showed advanced signs of fatigue on the pins and at least one pin had fractured. These were the units with the heat sinks attached.

After replacing both of them and the fuse the voltages measured within spec but the unit was still inoperable.

With board 2 fired up by itself all LEDs (except 211 and 212) light up and stay that way. It was also noted that U210 was too hot to touch. Reversing U204 and 206 resulted in U211 and 212 lighting but U213 and 214 becoming dark.

Removing U215 all darkened except 218.

Does this suggest a major calamity with a number of bad ICs on board 2. Unfortunately I do not have spares to plug in and try. Before going out and buying some new ones (and I suspect some of them are hard to get) I thought I would see if anyone had suggestions as to what to do. This unit has certainly had a rough passage over the last three months and appeared to have survived quite well until the above failure.

Sorry about this long tale but I would appreciate some comments.  
73 de Dave KI6QE/VK2IMJ

---

## 45. FT-736/DSP-93 program hacks

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Sun, 16 Apr 1995 22:54:27 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504170554.WAA19820@hopf.dnai.com>  
Rendered body type: text/plain

Hello Jim,

You are right about the changes needed for our FT-736. The mic click for PSK must be changed and the input/output levels need to be adjusted.

I set my FSK input for 1 volt P-P at TP-1. This gave me 5 volts P-P at TP-1 with PSK input. So the input for PSK must be attenuated in the software. Surprisingly, I copied PSK quite well in spite of this excess signal strength. I have not yet played with the PSK transmit deviation, but I'm sure that will also have to be attenuated as well. I did connect to A0-16 but I suspect I was overdeviating.

Talk to you more on the Tuesday net, band conditions permitting.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K023 and A016

---

## 46. Pausing ASM window from D93WE

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)  
Date: Tue, 18 Apr 95 07:55:27 CDT  
To: dsp-93@tapr.org  
Message-ID: <9504181255.AA08503@eagle.aud.alcatel.com>  
Rendered body type: text/plain

One frequent complaint about D93WE is that the assembler window does not pause after a TMS320 assembly, making it difficult to see whether or not there were any assembly errors. here is a simple way to make the window pause, and it will work with either version 1.0 or 1.1 or D93WE.

1. In the D93WE.INI file, change one line of the file.

Was:

Assembler=c:\dsp93\asm\tasm.exe ;filename of assembler

Change To:

Assembler=c:\dsp93\asm\tasm.bat ;filename of batch file

2. Using an ASCII text editor, create a new file, called tasm.bat, and put it into the directory c:\dsp93\asm. The contents of this file contain only two lines:

```
tasm.exe %1 %2 %3 %4 %5 %6 | more
PAUSE
```

Now, when you launch the assembler, D93WE will call the batch file, which will automatically pass the right parameters to TASM.EXE, and then cause the window to paginate each 24 lines and stop. It will also wait for you to 'Hit any key to continue...'.  
  
Thanks to Ron, W5RKN for a hint...

- Tom, N5EG

|                                         |                            |
|-----------------------------------------|----------------------------|
| -----+-----                             |                            |
| Tom McDermott                           | "All opinions expressed    |
| Alcatel Network Systems, Inc.           | are my own, and do not     |
| mcdermot@aud.alcatel.com                | represent those of Alcatel |
| [ ICC '96 Technical Program Secretary ] | Network Systems, Inc."     |
| [ June 23-27, 1996, Dallas, Tx. ]       |                            |
| -----+-----                             |                            |

---

## 47. diagrams

From: (Dick Scheeringa)  
Date: Tue, 18 Apr 95 15:53:51 edt  
To: dsp-93@tapr.org  
Message-ID: <199504181955.PAA20958@noc.tor.hookup.net>  
Rendered body type: text/plain

Are the schematics available in other than post script format? I would like to browse or print them but not having a post script print makes it a little difficult. If someone has them in gif or tif format would appreciate it...

Thanks Dick Scheeringa VE3HDJ

---

#### 48. Re: [DSP-93:601] DSP-93 problem(s)

From: "VON C. DEEKE" <VONDEEKE@delphi.com>  
Date: Thu, 20 Apr 1995 22:52:00 -0400 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <01HPKU8SOM4I9385EC@delphi.com>  
Rendered body type: text/plain

I think I had a similar problem when I first powered up my board. I did not have the pins on the between-board connectors firmly seated. I lost U206 and, I believe, U112. While swapping 74AS573 chips to troubleshoot, I damaged some of them. I got a replacement U112 from TAPR and '573 chips at the St. Louis TAPR meeting. I still need to install these and see if the problem is fixed. 73 de Von WB9KDY

---

#### 49. Re: [DSP-93:604] diagrams

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 21 Apr 1995 21:43:12 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199504220243.VAA29566@Joyce-Perkins.tenet.edu>  
Rendered body type: text/plain

They are available in printed form from the office.

Greg

TAPR Office (817) 383-0000  
TAPR@TAPR.ORG

According to Dick Scheeringa:

>  
> Are the schematics available in other than post script format? I would like to  
> browse or print them but not having a post script print makes it a little  
> difficult. If someone has them in gif or tif format would appreciate it...  
> Thanks Dick Scheeringa VE3HDJ  
>  
> dicksch@hookup.net  
>

---

#### 50. PTT still always on

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Sat, 22 Apr 1995 16:35:13 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504222335.QAA16690@hopf.dnai.com>  
Rendered body type: text/plain

Hello Ron and PK-232 owners,

My PTT line is still activated when I load any modem program. Could one of you PK-232 owners let me know what TNC header pins you had to jumper to get the dsp-93 to work with the PK-232? I just went through the cable documentation and TAPR construction updates again to see if my cables are jumpered correctly. I have the TAPR modem disconnect board in my PK-232. I have jumpered the DSP-93 disconnect header per page 32 of 33 (5-6, 9-10, 6-10, 11-12, 13-14). I have seen a couple messages that include jumpering 3-4, but there is no reason given. I tried it but it made no difference.

I have rev 2.15 EPROM. Per the latest construction errata updates I have strapped the following DSP-93 TNC header pins as follows:

PTT #1, 18 to 5v pin 3 (ground activates)  
Up/down #1, 14 to ground (5 v activates)  
PTT #2, 16 to ground (ground activates, eeprom bug reverses)  
Up/down #2, 7 to ground (ground activates, eeprom bug reverses)

The actual strapping is done in the DB-25 connector, but I used the TNC pin numbers to minimize confusion, as the TNC header pin numbers were used in correspondence with Ron and in the TAPR updates. All of the following tests were done with the DB-25 strapping connector disconnected except where specifically mentioned. The PK-232 and FT-736 lines were disconnected for all tests (even when the DB-25 was connected) to eliminate them as the source of any irregularities.

Testleds worked fine when I first ran it during my initial DSP-93 checkout, as did all the other test programs. I tried testleds again and found that with the header jumpers (without the DB-25 strapping connected) LEDs 6 and 7

do not light. These two LEDs do not light with testport, unless the header jumpers are removed. Even though LEDs 6 and 7 do not light, U205 pins read the levels Ron told me earlier: Running testport, all U-205 pins are high, except the following which go to ground as indicated:

| LED | U205 |
|-----|------|
| 7 * | 2    |
| 6 * | 4    |
| 5   | 6    |
| 4   | 12   |
| 3   | 10   |
| 2   | 8    |

(\* I counted to 5 to tell when these LEDs should be on.)

Even though these pin levels are correct, when I strapped TNC header pins 7, 14, 16 and 18 to ground, the following occurred on initialization (first value per Ron, second mine):

U205-2 High, High  
U205-4 High, High  
U205-6 High, High  
U205-8 High, Low  
U205-10 High, Low  
U205-12 High, High

I then tried to strap them all high but found that the 5 volt source at tnc header (pin 3) was pulled low when pin 14 was connected. I feared excess current drain so I did not test U205 with 7, 14, 16 and 18 high. Is my assumption that pin 3 should not be pulled to ground by pin 14 correct? This may be a clue to my problem, except that this is not a PTT line, but is the #1 up/down line.

Initially I thought my PTT problem may have been because I take my PK-232 PTT from the PK-232's radio 1 port and not the tnc header. But before I make a new cable with the ptt from this header, I wanted to be sure I got the jumpers and strapping correct, and that the problem was no in the DSP-93. I now suspect a bad component, but I have no idea how to proceed to locate the offending part. Have the above clues pointed to any specific IC I could try changing?

Ron, if you could hack testport.obj for the 736 my future PTT trouble shooting would be easier and I could see if the up/down lines work. I just printed out the TASM assembler documentation and I will begin digesting it after my DSP-93 is operational. I can see it will be a while before I am up to speed programming the DSP-93, though. I will begin by playing with the test programs, as you suggested to someone else.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16

---

## 51. Re: [DSP-93:607] PTT still always on

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 22 Apr 1995 19:24:29 -0500  
To: dsp-93@tapr.org  
Message-ID: <abbf4a2800021004e4c8@[204.181.160.77]>  
Rendered body type: text/plain

Howard:

>My PTT line is still activated when I load any modem program.

Both PTT lines or #1 or #2? What is the state at power-on/reset?

>I have rev 2.15 EPROM. Per the latest construction errata updates I have  
>strapped the following DSP-93 TNC header pins as follows:

>  
> PTT #1, 18 to 5v pin 3 (ground activates)  
> Up/down #1, 14 to ground (5 v activates)  
> PTT #2, 16 to ground (ground activates, eprom bug reverses)  
> Up/down #2, 7 to ground (ground activates, eprom bug reverses)

Have you added the pull-up to pin 3? If you did not, a lot of the strange stuff below could be the result. Without the pull-up, initialization is unpredictable. The "eprom bug reverses" problem also affects Up/down #1.

>Testleds worked fine when I first ran it during my initial DSP-93 checkout,



>as did all the other test programs. I tried testleds again and found that  
>with the header jumpers (without the DB-25 strapping connected) LEDs 6 and 7  
>do not light.

TESTLEDS should not be affected by the DB-25 strappings. If it is, you have  
an additional problem the you should resolve before proceeding.

>I then tried to strap them all high but found that the 5 volt source at tnc  
>header (pin 3) was pulled low when pin 14 was connected.

TNC pin 3 in not connected on the PCB (or at least it shouldn't be) until  
you dot the mod to it as stated in the Build Update 2 Feb:

"

\* Pin 3 on DSP-93 TNC not at 5V

A pullup resistor was left off the DSP-93 Board 2 to pullup pin 3 on the  
TNC connector (between U213 and U214). A solution is to solder a resistor  
(about 10k ohms) on the bottom of Board 2 between pin 3 of the  
TNC connector and U113 pin 20 (+5V). Be careful not to short either lead  
to any uninsulated point on the bottom of the board.

"

>Initially I thought my PTT problem may have been because I take my PK-232  
>PTT from the PK-232's radio 1 port and not the tnc header. But before I  
>make a new cable with the ptt from this header, I wanted to be sure I got  
>the jumpers and strapping correct, and that the problem was no in the  
>DSP-93. I now suspect a bad component, but I have no idea how to proceed to  
>locate the offending part. Have the above clues pointed to any specific IC  
>I could try changing?

I do not understand the preceeding paragraph. Have you not wired the 5  
wires between the DSP-93/TNC connector to the PK-232/modem disc. conn. as  
described in the Build Doc?

>Ron, if you could hack testport.obj for the 736 my future PTT trouble  
>shooting would be easier and I could see if the up/down lines work. I just  
>printed out the TASM assembler documentation and I will begin digesting it  
>after my DSP-93 is operational. I can see it will be a while before I am up  
>to speed programming the DSP-93, though. I will begin by playing with the  
>test programs, as you suggested to someone else.

I'll take a look at it but I need the following info for the FT-736 (also I  
can't test it):

PTT #1, (? activates)  
Up/down #1, (? activates)  
PTT #2, (? activates)  
Up/down #2, (? activates)

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 52. Re: PTT still always on

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sun, 23 Apr 1995 01:03:59 +0000  
To: dsp-93@tapr.org  
Message-ID: <9504230058.AA11548@camel.campbell.edu>  
Rendered body type: text/plain

Howard:

I have successfully used an older pk232 (no mailbox) with the DSP-93 (albeit  
a beta unit). I have used ONLY the lines from the modem disconnect header -  
not radio port 1 or 2. Did you buy the TAPR disconnect kit for the pk232?  
I think you really should use the disconnect header for all lines, even the  
PTT, just to safe.

>>Initially I thought my PTT problem may have been because I take my PK-232  
>>PTT from the PK-232's radio 1 port and not the tnc header. But before I  
>>make a new cable with the ptt from this header, I wanted to be sure I got  
>>the jumpers and strapping correct, and that the problem was no in the  
>>DSP-93. I now suspect a bad component, but I have no idea how to proceed to

>>locate the offending part. Have the above clues pointed to any specific IC  
>>I could try changing?  
>

Mark L. Hammond [KC4EBR]

---

### 53. Need help for FSK

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 23 Apr 1995 10:29:13 -0500  
To: dsp-93@tapr.org  
Message-ID: <abc021e000021004934e@[204.96.0.80]>  
Rendered body type: text/plain

One of our users in VK-land is having a strange problem using FSK. He receives with his TNC in KISS mode but not otherwise. PKT works fine. Any ideas?

To : VK3JDG  
From: W5RKN  
Time: 152315UTC  
Date: 23 Apr 1995  
-----  
Hello Geoff,

>G'day Ron,  
>  
>>  
>>On terrestrial 9600 FSKP1 (not in KISS) are you set for FULLDUP ON? The FSK  
>>modems supplied work only in full duplex. A version for half duplex will be  
>>ready with the next software release (mid-May). Unless the TNC is in full  
>>duplex, all data sent to the TNC will be held until DCD drops.  
>>  
>TX is fine, packets are recieved ok at the other end. I do have the tnc set  
>for fulldup on and am running full duplex on 2m and 70cm. The settings on the  
>tnc and the terminal programs have not changed since plugging in the dsp93.  
>Without changing anything other than unplugging the dsp93 and plugging the  
>G3RUH back it works fine but no recieve data from tnc to computer when  
>plugging the dsp93 back in. I use the same tnc parameters for 1200 afsk full  
>duplex and iy works fine with the dsp93 but tx only on 9600 fsk ( and recieve  
>if I put the tnc into kiss mode ). I know its a strange problem and I am at a  
>loss as to what to do now. There is another local here with the same problem  
>except he is using a MFJ1278..... Any clues as to a cure would be  
>greatly appreciated..  
>  
>  
>73 Geoff VK3JDG @ KO-23 or K025  
> Melbourne Australia  
>

I am at a complete loss. I'll post this on dsp-93@tapr.org and see if any other current users have an idea. Good luck.

73 from Ron - W5RKN

Using the TAPR/AMSAT DSP-93 unit - ask me about it!

-----  
Austin, Texas USA  
Internet : w5rkn@amsat.org  
SAT : KO-23, K0-25  
-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 54. TESTPORY (TESTPORT for Yaesu)

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 23 Apr 1995 13:19:12 -0500  
To: dsp-93@tapr.org  
Message-ID: <abc049b400021004ef26@[204.181.160.82]>  
Rendered body type: text/plain

I am flying blind here but here is my best guess (following Frank's comments) for a TESTPORT for Yaesu 736s. Can someone please test this and let me know if I guessed right.

```

TESTPORY.OBJ
:18200000FF801008FF801008FF801008FF801008CE01C800D001000004
:182018006062E362D00100006062E762E662D00100366062EB62D0019E
:1820300000406062E762D00100166062EB62FE801061D00100006062D5
:18204800E762D00100666062EB62FE801061D00100BE6062EB62FE80E6
:182060001061D00100366062EB62D00101006062E662D0010032606240
:18207800EB62FE801061D00102006062E662D00100346062EB62FE80A5
:182090001061D00104006062E662D00100376062EB62FE801061D00111
:1820A8000006062E662D00100366062EB62FE801061FF80100EFF80F5
:1820C000105FC2FFC1FFC367558BFB9010645589FB901063558AFB90C9
:0420D8001062CE269E
:00000001FF

```

```

TESTPORY.ASM
; File: TESTPORY.ASM Copyright TAPR 1994
; AIO chip reset, with no audio output or conversions
; Copyright Frank H Perkins, 1993 and Lon Cecil, 1994
; Walking light test steps on LED 2 to LED 2.
; LED208 is fixed active as power indicator
; Step rate is clock dependent, approx 5 sec per step @ 40 MHz
; Note that gain and multiplexers are restored to "0000" writes on
; ports 06h & 07h
; Port 1 and Port 2 radio controls FUP, FDN & PTT are exercised, in
; sequence, ACTIVE about 5 seconds each
; Version for Yaesu 736 (RGP)
;
; Copyright (c) 1994 by Tucson Amateur Packet Radio Corporation
;
; This document, and it executable, are the property of the Tucson Amateur
; Packet Radio Corp., a Arizona non-profit corporation, and all are copyright
; 1994. Permission is hereby granted for the non-commercial use of these
; properties only by licensed amateur radio operators. All other rights are
; reserved by the Tucson Amateur Packet Radio Corp.
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; users. Commercial inquiries should be made to Tucson Amateur Packet Radio
; Corp.
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; TAPR (Tucson Amateur Packet Radio Corporation) makes no warranty of any
; kind, express or implied, including without limitation, any warranties
; and/or fitness for a particular purpose of this software. TAPR shall not be
; liable for any damages, whether direct, indirect, special or consequential
; arising from a failure of this software to operate in the manner desired by
; the user. TAPR shall not be liable for any damage to data or property that
; may be caused directly or indirectly by using the software.
;
; IN NO EVENT WILL TUCSON AMATEUR PACKET RADIO CORP. BE LIABLE FOR ANY
; INCIDENTAL OR CONSEQUENTIAL DAMAGE ARISING OUT OF USE OR INABILITY TO USE
; THE PROGRAM, OR FOR ANY CLAIM BY ANY OTHER PARTY.
;
AR0 EQU 00h ; aux register 0 (equate used by TASM)
AR1 EQU 01h ; aux register 1
AR2 EQU 02h ; aux register 2
AR3 EQU 03h ; aux register 3
AR4 EQU 04h ; aux register 4
AR5 EQU 05h ; aux register 5
AR6 EQU 06h ; aux register 6
AR7 EQU 07h ; aux register 7
DRR EQU 00h ; SIO receive buffer
DXR EQU 01h ; SIO transmit buffer
PRD EQU 03h ; Timer period buffer
IMR EQU 04h ; INT mask buffer
BUFO EQU 060h ; SIO output buffer
BUFI EQU 061h ; SIO input buffer
DO EQU 062h ; data output buffer
.ORG 1000h
B GO ; safety branch to program start
B GO ; branch to program start
B GO ; branch to program start
B GO ; safety branch to program start
GO DINT ; shut off interrupts
LDPK 00h ; data mem page 0
ANA_INI LALK 0000h ; sel AUX in, gain = 1, LEDs OFF
SACL DO ; into DO
OUT DO,03h ; out to ANA latch

DSP LALK 0000h ; load DSP start

```

|        |      |        |                                                  |
|--------|------|--------|--------------------------------------------------|
|        | SACL | D0     | ; into D0                                        |
|        | OUT  | D0,07h | ; out to port 07h                                |
|        | OUT  | D0,06h |                                                  |
|        | LALK | 0036h  | ; use LALK 0000h for PTT*/FD*/FU* radios         |
|        |      |        | ; LALK 0036h to port 0Bh (Yaesu 736R PTT*/FD/FU) |
|        | SACL | D0     |                                                  |
|        | OUT  | D0,0Bh | ; out to Analog Sel                              |
| LED202 | LALK | 0040h  | ; load to light LED 202 and dark LED 201         |
|        | SACL | D0     | ; into D0                                        |
|        | OUT  | D0,07h | ; out to LED 202                                 |
|        | LALK | 0016h  | ; LALK 0020h to set Port 2 FD Bit 6 HIGH         |
|        |      |        | ; LALK 0016h FD low (Yaesu 736R PTT*/FD/FU)      |
|        | SACL | D0     |                                                  |
|        | OUT  | D0,0Bh | ; out to LED 203                                 |
|        | CALL | WAIT1  |                                                  |
| LED203 | LALK | 0000h  |                                                  |
|        | SACL | D0     |                                                  |
|        | OUT  | D0,07h | ; dark LED 202 and LED 201                       |
|        | LALK | 0066h  | ; LALK 0050h to light LED 6 and to also          |
|        |      |        | ; set Port 2 FU Bit 5 HIGH                       |
|        |      |        | ; LALK 0066h FD low (Yaesu 736R PTT*/FD/FU)      |
|        | SACL | D0     |                                                  |
|        | OUT  | D0,0Bh | ; out to LED 203                                 |
|        | CALL | WAIT1  |                                                  |
| LED204 | LALK | 00BEh  | ; LALK 0088h to light LED 204 and to also        |
|        |      |        | ; set Port 2 PTT Bit 4 HIGH                      |
|        |      |        | ; LALK 00BEh FD low (Yaesu 736R PTT*/FD/FU)      |
|        | SACL | D0     | ; into D0                                        |
|        | OUT  | D0,0Bh | ; out to LED 204                                 |
|        | CALL | WAIT1  |                                                  |
|        | LALK | 0036h  | ; LALK 0000h to clear LED 204                    |
|        |      |        | ; LALK 0036h to port 0Bh (Yaesu 736R PTT*/FD/FU) |
|        | SACL | D0     |                                                  |
|        | OUT  | D0,0Bh |                                                  |
| LED205 | LALK | 0100h  | ; load to light LED 205                          |
|        | SACL | D0     | ; into D0                                        |
|        | OUT  | D0,06h | ; out to LED 205                                 |
|        | LALK | 0032h  | ; LALK 0004h Port 1 FD Bit 3 HIGH                |
|        |      |        | ; LALK 0032h to port 0Bh (Yaesu 736R PTT*/FD/FU) |
|        | SACL | D0     |                                                  |
|        | OUT  | D0,0Bh |                                                  |
|        | CALL | WAIT1  |                                                  |
| LED206 | LALK | 0200h  | ; load to light LED 206                          |
|        | SACL | D0     | ; into D0                                        |
|        | OUT  | D0,06h | ; out to LED                                     |
|        | LALK | 0034h  | ; LALK 0002h Port 1 FU BIT 2 HIGH                |
|        |      |        | ; LALK 0034h to port 0Bh (Yaesu 736R PTT*/FD/FU) |
|        | SACL | D0     |                                                  |
|        | OUT  | D0,0Bh |                                                  |
|        | CALL | WAIT1  |                                                  |
| LED207 | LALK | 0400h  | ; load to light LED 207                          |
|        | SACL | D0     | ; into D0                                        |
|        | OUT  | D0,06h | ; out to LED                                     |
|        | LALK | 0037h  | ; LALK 0001h Prt 1 PTT BIT 1 HIGH                |
|        |      |        | ; LALK 0037h to 0Bh (Yaesu 736R PTT*/FD/FU)      |
|        | SACL | D0     |                                                  |
|        | OUT  | D0,0Bh |                                                  |
|        | CALL | WAIT1  |                                                  |
|        | LALK | 0000h  |                                                  |
|        | SACL | D0     |                                                  |
|        | OUT  | D0,06h | ; out to dark LED 207                            |
|        | LALK | 0036h  | ; LALK 0000h clear bits                          |
|        |      |        | ; LALK 0036h to 0Bh (Yaesu 736R PTT*/FD/FU)      |
|        | SACL | D0     |                                                  |
|        | OUT  | D0,0Bh | ; out to Port                                    |
|        | CALL | WAIT1  |                                                  |
|        | B    | DSP    |                                                  |
| FREEZ  | B    | FREEZ  |                                                  |

```

WAIT1 LARK AR2,0FFh ; DOUBLE LOOP wait table
WAIT_A LARK AR1,0FFh ; uses AR1 and AR2
WAIT_B LARK AR3,067h
WAIT_B2 LARP AR3
 BANZ WAIT_B2
 LARP AR1
 BANZ WAIT_B
 LARP AR2
 BANZ WAIT_A
 RET

.END

```

Ron W5RKN

also:  
w5rkn@amsat.org

## 55. Re: [DSP-93:610] Need help for FSK

From: Roy Welch <rdw@crl.com>  
Date: Sun, 23 Apr 1995 11:33:36 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950423112957.6811C-100000@crl10.crl.com>  
Rendered body type: text/plain

Ron, could this be related to the problem I had with turn around. When he says he can't receive, does he mean he can't even monitor, or just not see any response to his outgoing packets. If this is the same problem, he might try dropping the value of the audio input capacitor in the DSP-93 from 10 Mf to about 2-3 mf. This was what I had to do to work terrestrial 9600. This was due to having a DC bias pulse on the switch over from xmit to rcv from my IC-475.

73, Roy -- W0SL

On Sun, 23 Apr 1995, Ronald G. Parsons wrote:

```

> One of our users in VK-land is having a strange problem using FSK. He
> receives with his TNC in KISS mode but not otherwise. PKT works fine. Any
> ideas?
>
>
> To : VK3JDG
> From: W5RKN
> Time: 152315UTC
> Date: 23 Apr 1995
> -----
> Hello Geoff,
>
> >G'day Ron,
>
> >>
> >>On terrestrial 9600 FSKP1 (not in KISS) are you set for FULLDUP ON? The FSK
> >>modems supplied work only in full duplex. A version for half duplex will be
> >>ready with the next software release (mid-May). Unless the TNC is in full
> >>duplex, all data sent to the TNC will be held until DCD drops.
> >>
> >TX is fine, packets are recieved ok at the other end. I do have the tnc set
> >for fulldup on and am running full duplex on 2m and 70cm. The settings on the
> >tnc and the terminal programs have not changed since plugging in the dsp93.
> >Without changing anything other than unplugging the dsp93 and plugging the
> >G3RUH back it works fine but no recieve data from tnc to computer when
> >plugging the dsp93 back in. I use the same tnc parameters for 1200 afsk full
> >duplex and iy works fine with the dsp93 but tx only on 9600 fsk (and recieve
> >if I put the tnc into kiss mode). I know its a strange problem and I am at a
> >loss as to what to do now. There is another local here with the same problem
> >except he is using a MFJ1278..... Any clues as to a cure would be
> >greatly appreciated..
>
>
>
> >73 Geoff VK3JDG @ K0-23 or K025
> > Melbourne Australia
>
>
>
> I am at a complete loss. I'll post this on dsp-93@tapr.org and see if any

```

```

> other current users have an idea. Good luck.
>
> 73 from Ron - W5RKN
>
> Using the TAPR/AMSAT DSP-93 unit - ask me about it!
>
> -----
> Austin, Texas USA
> Internet : w5rkn@amsat.org
> SAT : KO-23, KO-25
> -----
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>

```

## 56. Re: [DSP-93:608] Re: PTT still always on

From: sodja@hopf.dnai.com (Howard Sodja)  
 Date: Sun, 23 Apr 1995 15:19:11 -0700  
 To: dsp-93@tapr.org  
 Message-ID: <199504232219.PAA17941@hopf.dnai.com>  
 Rendered body type: text/plain

Hello Ron,

Thanks again for your fast reply.

>Both PTT lines or #1 or #2? What is the state at power-on/reset?

Yes, both #1 and #2, at initial power-on and when running all the test programs, the PTT is off. The PTT for both #1 and #2 is activated only when I load a modem program, including the audio filter program. Pressing reset releases the PTT.

>Have you added the pull-up to pin 3?

Yes. Pin 3 has 5 v. But when I tie it to tnc header pin 14 it goes to less than a half volt. Strapping pin 3 to TNC header pins 7, 16 and 18 does not change pin 3's voltage.

Thanks to K60YY uploading all the errata updates on KO-23 (before I got on the Internet), I have all the updates done except for the C212/213 reversal. As I can copy fsk and psk fine (with the PTT operated manually), I'll get to this fix the next time I have my boards separated.

>TESTLEDS should not be affected by the DB-25 strappings. If it is, you have  
>an additional problem the you should resolve before proceeding.

No, it is not the DB-25 strapping, but the jumpering of the tnc header pins (5-6, 9-10, 6-10, 11-12, 13-14) that effect the LEDs. I do think this is a clue to my problem. Another clue is tnc header pin 14 effect on pin 3, mentioned above, when tied to pin 3's 5 v.

>TNC pin 3 in not connected on the PCB (or at least it shouldn't be) until  
>you dot the mod to it as stated in the Build Update 2 Feb:

Done, as discussed above.

```

>>Initially I thought my PTT problem may have been because I take my PK-232
>>PTT from the PK-232's radio 1 port and not the tnc header. But before I
>>make a new cable with the ptt from this header, I wanted to be sure I got
>>the jumpers and strapping correct, and that the problem was no in the
>>DSP-93. I now suspect a bad component, but I have no idea how to proceed to
>>locate the offending part. Have the above clues pointed to any specific IC
>>I could try changing?
>

```

>I do not understand the preceding paragraph. Have you not wired the 5  
 >wires between the DSP-93/TNC connector to the PK-232/modem disc. conn. as  
 >described in the Build Doc?

No. I already had a cable from my TAPR modem disconnect header inside my PK-232 for my TAPR PSK, G3RUH FSK, and HF RTTY/AMTOR modems. They all use the PTT line from the PK-232's radio port 1. I had always assumed they were the same line. It works for my three other external modems. This was done to simplify the cabling for the other three modems. I cannot tell for sure

if they are the same from the schematic as they all go in and out of a common "trunk" line on the schematic that goes from IC to IC. Once I get the DSP-93 working properly without the PK-232 connected, I'll take the PK-232 apart and do a continuity check. I did NOT want to make another cable as that would mean either my three other modems would not be usable, or (shudder!) I'd have to make a totally new cabling system for all four modems. That would be quite an undertaking. As I hope the DSP-93 will make these modems obsolete, I hope I can make do with my DSP-93 cable splice until the internal DSP-93 tnc is available.

For the DSP-93 I just spliced into my existing modem cables to get the modem disconnect lines from the TAPR disconnect header inside the PK-232. I never connected the header's PTT line inside the PK-232 as radio port 1's PTT worked fine. As all of the information in my last message is with the PK-232 disconnected, the problems we are discussing now are not PK-232 caused.

I know of at least two hams who were disappointed in their commercial DSPs and went back to their old hardware modems. I want to be able to change modems during a pass to get a good comparison of the DSP-93 vs. my hardware modems.

>>Ron, if you could hack testport.obj for the 736 my future PTT trouble  
>>shooting would be easier and I could see if the up/down lines work.

>  
>I'll take a look at it but I need the following info for the FT-736 (also I  
>can't test it):  
> PTT #1, (? activates) Ground (FT-736R)  
> Up/down #1, (? activates) + 5 volts  
> PTT #2, (? activates) Ground (TS-440S)  
> Up/down #2, (? activates) Ground

I'll be glad to test it, and I'm sure Jim, K60YY can test it also. He reported to me that his DSP-93 is built and he is now at the cabling stage.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 57. Re: [DSP-93:609] Re: PTT still always on

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Sun, 23 Apr 1995 15:19:17 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504232219.PAA17945@hopf.dnai.com>  
Rendered body type: text/plain

Hello Mark,

> Did you buy the TAPR disconnect kit for the pk232?  
>I think you really should use the disconnect header for all lines, even the  
>PTT, just to safe.

Yes I do use the TAPR disconnect modem. Read my message to Ron for my reasoning in doing it the way I did.

You did not say so specifically, but I assume that you then just jumpered the DSP-93 tnc header per page 32 of 33, pins 5-6, 9-10, 6-10, 11-12, 13-14. If you can confirm this, then this is one more item off my question list.

Thanks for the reply.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

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## 58. Re: [DSP-93:613] Re: PTT still always on

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 23 Apr 1995 18:46:24 -0500  
To: dsp-93@tapr.org  
Message-ID: <abc0923d000210046342@[204.96.0.76]>  
Rendered body type: text/plain

>Hello Ron,  
>  
>Thanks again for your fast reply.

```

>
>>Both PTT lines or #1 or #2? What is the state at power-on/reset?
>
>Yes, both #1 and #2, at initial power-on and when running all the test
>programs, the PTT is off. The PTT for both #1 and #2 is activated only when
>I load a modem program, including the audio filter program. Pressing reset
>releases the PTT.

```

This means that U205-2 and U205-12 is high until a modem program starts running. Is this true even if you disconnect the plugs from Radio 1 and Radio 2? If not, then something is wrong in your radio cabeling.

```

>>Have you added the pull-up to pin 3?
>
>Yes. Pin 3 has 5 v. But when I tie it to tnc header pin 14 it goes to less
>than a half volt. Strapping pin 3 to TNC header pins 7, 16 and 18 does not
>change pin 3's voltage.

```

What value resistor is used to strap TNC-3 th +5V? Are you saying the TNC-14 goes to .5V ? Is so, something is terribly wrong either in your PCB or U213-6.

```

>>TESTLEDS should not be affected by the DB-25 strappings. If it is, you have
>>an additional problem the you should resolve before proceeding.
>
>No, it is not the DB-25 strapping, but the jumpering of the tnc header pins
>(5-6, 9-10, 6-10, 11-12, 13-14) that effect the LEDs. I do think this is a
>clue to my problem. Another clue is tnc header pin 14 effect on pin 3,
>mentioned above, when tied to pin 3's 5 v.

```

Yes, concentrate on fixing TNC-3/TNC-14 first. Do this without the connection between the Interface Port and your TNC modem disc. conn. That way we eliminate the PK-232 and its cabling until things get "normal". Mark, KC5EBR, has already made comments to you on the PK-232 as he has one. When we get to that point, I'll drop out and let you and Mark get it working with the PK-232.

```

>>>Ron, if you could hack testport.obj for the 736 my future PTT trouble
>>>shooting would be easier and I could see if the up/down lines work.

```

TESTPOTY was posted today. Let me know if it works.

```

>> PTT #1, (? activates) Ground (FT-736R)
>> Up/down #1, (? activates) + 5 volts
>> PTT #2, (? activates) Ground (TS-440S)
>> Up/down #2, (? activates) Ground

```

Use TESTPORY when the FT-736 is connected and TESTPORT with the TS-440S. Or use the source I posted to hack up a special version for these two radios.

Ron W5RKN

also:  
w5rkn@amsat.org

## 59. Re: [DSP-93:614] Re: PTT still always on

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sun, 23 Apr 1995 23:46:26 +0000  
To: dsp-93@tapr.org  
Message-ID: <9504232341.AA14723@camel.campbell.edu>  
Rendered body type: text/plain

Howard,

I not sure if you imply this, but page 32 of 33 shows the jumpers on the \*\*TNC\*\* disconnect header, not the DSP-93 header as you imply below.

Make sure the jumpers are on the TNC-2 (i.e., PK-232 headers) ONLY!

You should NOT have to jumper pins on the DSP-93 except for 5Volt or ground, depending on the radio (and eprom version) ;)

I had been running both the TAPR9600 and TAPR PSK modems with my PK-232 prior to testing out the DSP-93. I simply unplugged the other two modems, and then replaced it with the connector I fashioned for the DSP-93. So, I did NOT have to jumper anything new or extra in the PK-232 (or the DSP-93 for that matter - except for strapping the ptt/freq lines). It was VERY



much plug and play.

I think we have to be really careful when we use more than one modem on the disconnect header. I think that you might have "cheated" by only splicing in the lines and might have created a connection that is not supposed to exist. As we add modems onto the "chain" of modems, some traces/jumpers must be removed so that the data comes thru the modems correctly, all the way thru the "chain".

Is that as clear as mud????

For testing purposes, I would suggest making a temporary cable to hook up ONLY the DSP-93 to the PK-232 disconnect header. Start simple, make sure it all works, and then start the splicing. Just a suggestion of what works in my shack...start simple.

```
>Hello Mark,
>
>> Did you buy the TAPR disconnect kit for the pk232?
>>I think you really should use the disconnect header for all lines, even the
>>PTT, just to safe.
>
>Yes I do use the TAPR disconnect modem. Read my message to Ron for my
>reasoning in doing it the way I did.
>
>You did not say so specifically, but I assume that you then just jumpered
>the DSP-93 tnc header per page 32 of 33, pins 5-6, 9-10, 6-10, 11-12, 13-14.
>If you can confirm this, then this is one more item off my question list.
>
>Thanks for the reply.
>
>73
>Howard Sodja, W6SHP In the SF Bay area
>AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605
>Microsats @ K0-23 and A0-16
>w6shp@amsat.org
>
>
>
```

Mark L. Hammond [KC4EBR]

---

## 60. Testport for FT-736

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Sun, 23 Apr 1995 17:39:29 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504240039.RAA22372@hopf.dnai.com>  
Rendered body type: text/plain

Ron,

I just got your testport program and was getting set up to re-strap my DB-25. I had changed them around for the tests I did that I reported to you yesterday. After all the testing I did with these lines, reporting the tnc pins while changing DB-25 pins, I memorized the DB-25 to tnc header numbers. I reread the following message to be sure I got the strapping correct.

```
==++++++WARNING++++++
==++++++WARNING++++++
```

We have discovered an error in the port initialization code.

This is the procedure that initializes PTT and FREQ UP/DOWN at resetand power-on times.

It turns out that PTT Port 1 ALWAYS initializes high. PTT Port 2 and both UP/DOWN lines initialize "backwards", i.e., when you strap the their initialization lines (DSP-93 TNC pins 7, 16, 18) low, the corresponding port initializes high, and vice versa.

Please be careful as this could cause your transmitter to key unexpectedly.

```
==++++++WARNING++++++
==++++++WARNING++++++
```

I was startled to discover I had originally followed the verbal portion of the message, converting FUNCTION to DB-25 pin numbers. But the pins mentioned indicate pin 18, PTT #1 is backwards, while you verbally say it is

always initialized positive. Shouldn't it say 7, 16 and 14?

I'll assume the verbal instruction is correct. As my pin 14 sinks my 5 v I'll have to try testport without strapping pin 14, and hope it will work once the routine begins. My understanding is that these straps are on for initial conditions, and are overridden once software is run to command them.

-----  
-----

(an hour later)

I just tried testport.obj and am happy to report it worked great! EVERYTHING worked, including the PTT on my 736 and TS-440. Even though pin 14 was just floating, the 736 freq did not move until commanded to move. Of course I still had to count to 5 for LEDs 6 and 7.

I guess that means that the PTT line from the PK-232's radio port 1 is ok, and my problem is, in fact, in the DSP-93. I tried the FSK program again in the off chance that I accidentally fixed the problem (I have been known to do that!). But alas, the PTT still went on as soon as the fsk program was loaded.

The more I trouble-shoot, the more I am suspecting a flaky IC that is causing the various symptoms I am experiencing. I think it is now safe to say the bug is in the DSP-93. What does the modem software do to the PTT that testport does not do? Is there an IC (or portion of an IC) that is common to all the symptoms I have, that testport does not use?

Thanks for the testport program. Now we know a bit more of what is NOT wrong with my set-up. We are narrowing the problem down. I'm open for more suggestions.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

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## 61. Re: [DSP-93:617] Testport for FT-736

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 23 Apr 1995 20:21:18 -0500  
To: dsp-93@tapr.org  
Message-ID: <abc0ab07000210043659@[204.96.0.137]>  
Rendered body type: text/plain

Howard,

>I was startled to discover I had originally followed the verbal portion of  
>the message, converting FUNCTION to DB-25 pin numbers. But the pins  
>mentioned indicate pin 18, PTT #1 is backwards, while you verbally say it is  
>always initialized positive. Shouldn't it say 7, 16 and 14?

You are right, it should say 7, 14 and 16. The strapping on 18 is ignored. The strapping on 7, 14 and 16 should be the reverse of how you want it initialized. Of course, once you run testport or any program that munges PTT or UP/DN, the initialization does not matter.

As far as LEDs 6 and 7, was Mark right?  
"I not sure if you imply this, but page 32 of 33 shows the jumpers on the  
\*\*TNC\*\* disconnect header, not the DSP-93 header as you imply below."

LEDs 6 and 7 connect to TNC 6 and 10. These are part of the 5-6-10-9 jumper on the modem disconnect connector. You are not using a full 20 wire cable to connect the DSP-93 to your TNC are you?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 62. Re: [DSP-93:615] Re: PTT still always on

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Sun, 23 Apr 1995 22:34:09 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504240534.WAA03311@hopf.dnai.com>  
Rendered body type: text/plain

Hello again, Ron,

>This means that U205-2 and U205-12 is high until a modem program starts running.

>Is this true even if you disconnect the plugs from Radio 1 and Radio 2?

>If not, then something is wrong in your radio cabling.

It is the same with or without the cables (with strapping removed):

U205-2 initializes high, goes low when program loaded

U205-12 initializes low, goes high when program loaded (per eeprom reverse bug)

So that, plus testport working fine, eliminates the cables as the problem.

>What value resistor is used to strap TNC-3 to +5V? Are you saying the

>TNC-14 goes to .5V ? Is so, something is terribly wrong either in your PCB

>or U213-6.

I used a 10K resistor. I just double-checked with an ohm meter and confirmed I did not confuse a faded red for orange.

I then checked U213's pin 6. It stayed low when the DSP-93 is turned on, a modem program is loaded, or when reset is activated. Nothing made it go high. Is this a good clue?

>Yes, concentrate on fixing TNC-3/TNC-14 first. Do this without the

>connection between the Interface Port and your TNC modem disc. conn. That

>way we eliminate the PK-232 and its cabling until things get "normal".

>Mark, KCSEBR, has already made comments to you on the PK-232 as he has one.

>When we get to that point, I'll drop out and let you and Mark get it

>working with the PK-232.

I tried removing each TNC header jumper one by one to see if any would effect the voltage drop when pins 3 and 14 are jumpered. I discovered that with 13-14 removed, 3-14 can be jumpered without pin 3 dropping it's voltage. So pin 13 is sinking pin 3's voltage.

I tried loading the FSK and PSK programs to see if the PTT still activated. It did. So, although this is not a fix, we found another clue, pin 13 sinks pin 3's 5 volts.

I got your KO-23 message. I thought I gave you the 736 PTT and up/down info when I requested that you hack a 736 testport for me to try. When I didn't hear from you I assumed you suddenly got busy and did not have the time to hack it.

I find that when I spend a large block of time playing with my computer or station, I end up having to leave my computer and radio alone for a while until I get caught up on all my deferred chores and responsibilities. Also my xyl/social director will sometimes schedule me solid for several days straight, which results in severe radio deprivation. As you have been so quick to reply to all my messages so far, I figured you probably were getting caught up on the rest of your life.

Without your help my DSP-93 would be gathering dust on my workbench, as I ran out of ideas. As I said to Jim, I do not understand what is going on when I try to study the schematic. I may not have yet fixed my PTT bug, but with each message exchange I feel we are homing in on the bug.

Now that the DSP-93 is built, it is time for me to begin to learn what is going on. I am way over my head with this project, so I have a lot of learning to do. I have absolutely no formal technical education. I am professionally a social worker with my degree in psychology. I got my novice license in high school. I have been teaching myself ever since. I first learned how to build and trouble-shoot by building and using Heathkit radios and test gear, and modifying and repairing military surplus gear. I then built (from scratch) a complete HF (160 to 15 meters) solid state station, from QST, Ham Radio, and ARRL Handbook articles. When I finished and was on the air with this station, I was able to pass my Extra class license. Now I am taking the digital plunge. So now you understand why I have a hard time understanding the DSP-93. Until now the only digital experience I have had was building my solid state QSK keying sequence circuit for my home brew rig, and building the TAPR PSK and G3RUH modems. The DSP-93 is a qualitative step beyond.

In case I forget later, thank for the "Elmering" you have provided. One of these days I hope I will be able to help others with their DSP problems. But, as I said, I have a lot of learning to do.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

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### 63. Re: [DSP-93:616] Re: PTT still always on

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Sun, 23 Apr 1995 22:34:14 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504240534.WAA03317@hopf.dnai.com>  
Rendered body type: text/plain

Hello Mark,

>I not sure if you imply this, but page 32 of 33 shows the jumpers on the  
>TNC disconnect header, not the DSP-93 header as you imply below.

As the lines are the same and the pin-outs identical it should not make any difference what end is jumpered. If I did it in the PK-232, that would mess up the operation of my other modems. I just checked my TAPR modem disconnect documentation and confirmed the pins are the same on both headers, and it is not jumpered as in page 32 of 33.

>I had been running both the TAPR9600 and TAPR PSK modems with my PK-232  
>prior to testing out the DSP-93. I simply unplugged the other two modems,  
>and then replaced it with the connector I fashioned for the DSP-93. So, I  
>did NOT have to jumper anything new or extra in the PK-232 (or the DSP-93  
>for that matter - except for strapping the ptt/freq lines). It was VERY  
>much plug and play.

I want to be able to change modems during a pass or QSO, so I want to keep them all on-line with just a few switches thrown.

>I think we have to be really careful when we use more than one modem on the  
>disconnect header. I think that you might have "cheated" by only splicing  
>in the lines and might have created a connection that is not supposed to  
>exist. As we add modems onto the "chain" of modems, some traces/jumpers  
>must be removed so that the data comes thru the modems correctly, all the  
>way thru the "chain".  
>Is that as clear as mud????

I agree there is a potential of problems, but my PTT problem exist even when the PK-232 and radios are disconnected. I just further confirmed the cables are ok with the 736 testport Ron just hacked. All lines worked fine.

If you get either the AMSAT Journal or Oscar News you saw a while back an article by me on the PK-232. I included a schematic on how I have all my modems interconnected with the PK-232, and how I switch them.. I gave this a lot of thought because you are right, one wrong line and everything comes to a halt. But now that I can switch between 3 external modems and the internal PK-232 modem, adding another modem shouldn't be that hard. The first two were the hardest. I am looking forward to retiring the PK-232 and my multiple modems once the internal tnc board is available and installed in my DSP-93.

I have used the DSP-93 on AO-16 and KO-23, with the PTT line disconnected, my manually controlling the PTT line, and all worked great. So all the lines seem to be ok.

Thanks for the feedback.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

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### 64. Re: [DSP-93:618]More Re: Testport for FT-736

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Sun, 23 Apr 1995 23:19:41 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504240619.XAA04868@hopf.dnai.com>  
Rendered body type: text/plain

Hello Mark and Ron.,

>As far as LEDs 6 and 7, was Mark right?

>"I not sure if you imply this, but page 32 of 33 shows the jumpers on the  
>\*\*\*TNC\*\* disconnect header, not the DSP-93 header as you imply below."  
>  
>LEDs 6 and 7 connect to TNC 6 and 10. These are part of the 5-6-10-9 jumper  
>on the modem disconnect connector. You are not using a full 20 wire cable  
>to connect the DSP-93 to your TNC are you?

Yes, I do jumper inside the DSP-93.

I replied to both of your messages late tonight. My reply was based on comparing the hardware interconnection of the PK-232 and DSP-93. But later while reading the explanation of each pin in the TAPR Modem Disconnect board I discovered some functions and "no connections" appear to differ between the two ends. So I will go and buy some new connectors and try a dedicated line from the PK-232 to the DSP-93. Although the hardware is identical, perhaps the DSP-93 software implementation changes the way some lines function. That could mess up things inside the other modems, as Mark suggested.

As I said in my last message, I do not understand what some lines are doing, and this conflict in DSP-93 and TNC header lines can only be resolved by trying a dedicated line to the DSP-93.

I dread going into the PK-232 as it is on the very bottom of my tall stack of modems and switch boxes. On both sides of this stack I have other gear stacked. So I must disconnect too many cables and lines to think about! But if it works, it will be worth it. It will be no small chore!

I am still open to any other suggestions. Thanks for all the help so far. Now I need to get to sleep! It is 11:15 pm and I have been messing with my DSP-93 since 7 am this morning (not to mention most of Saturday).

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

## 65. DSP-93 = no jumpers

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 24 Apr 1995 11:12:36 +0000  
To: dsp-93@tapr.org  
Message-ID: <9504241107.AA16480@camel.campbell.edu>  
Rendered body type: text/plain

Howard,

I think you should NOT have to open the pk-232. Just remove the jumpers from the DSP-93 (except for the pullup/pulldown strapping lines).

Since your PK-232 works with the other modems, it is ready to go with the DSP-93. I think removing the jumpers from the DSP-93 might get you even closer.....keep us posted! Glad your DSP-93 is not gathering dust....jeesh, I don't even put the screws in my cover since I like to play with mine so much!

>Hello Mark and Ron.,  
>  
>>As far as LEDs 6 and 7, was Mark right?  
>>"I not sure if you imply this, but page 32 of 33 shows the jumpers on the  
>>\*\*\*TNC\*\* disconnect header, not the DSP-93 header as you imply below."  
>>  
>>LEDs 6 and 7 connect to TNC 6 and 10. These are part of the 5-6-10-9 jumper  
>>on the modem disconnect connector. You are not using a full 20 wire cable  
>>to connect the DSP-93 to your TNC are you?  
>  
>Yes, I do jumper inside the DSP-93.  
>  
>I replied to both of your messages late tonight. My reply was based on  
>comparing the hardware interconnection of the PK-232 and DSP-93. But later  
>while reading the explanation of each pin in the TAPR Modem Disconnect  
>board I discovered some functions and "no connections" appear to differ  
>between the two ends. So I will go and buy some new connectors and try a  
>dedicated line from the PK-232 to the DSP-93. Although the hardware is  
>identical, perhaps the DSP-93 software implementation changes the way some  
>lines function. That could mess up things inside the other modems, as Mark  
>suggested.  
>

>As I said in my last message, I do not understand what some lines are doing,  
>and this conflict in DSP-93 and TNC header lines can only be resolved by  
>trying a dedicated line to the DSP-93.  
>  
>I dread going into the PK-232 as it is on the very bottom of my tall stack  
>of modems and switch boxes. On both sides of this stack I have other gear  
>stacked. So I must disconnect too many cables and lines to think about!  
>But if it works, it will be worth it. It will be no small chore!  
>  
>I am still open to any other suggestions. Thanks for all the help so far.  
>Now I need to get to sleep! It is 11:15 pm and I have been messing with my  
>DSP-93 since 7 am this morning (not to mention most of Saturday).  
>  
>73  
>Howard Sodja, W6SHP In the SF Bay area  
>AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
>Microsats @ K0-23 and A0-16  
>w6shp@amsat.org  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 66. Re: [DSP-93:622] DSP-93 = no jumpers

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 24 Apr 1995 07:15:30 -0500  
To: dsp-93@tapr.org  
Message-ID: <abc145b1000210048cd4@[204.181.160.86]>  
Rendered body type: text/plain

Howard,

Just want to echo Mark's words and thank him for his good detective work.

The ONLY thing that should be connected to the TNC connector on the DSP-93 is:

1. The initialization jumpers on pins 7, 14, 16, 18.
2. The pull-up to 5V on pin 3 and ground on pin 15.
3. FIVE AND ONLY FIVE wires that go to the TNC modem disconnect header as shown on page 32 of the build document.

These connections (except for the pull-up to 5V) may be made on the TNC cable or the DB-25 interface Port connector.

Thanks, Mark.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 67. Non-postscript printers

From: deh6@po.CWRU.Edu (Donald E. Haselwood)  
Date: Mon, 24 Apr 1995 12:37:26 -0400  
To: dsp-93@tapr.org  
Message-ID: <199504241637.MAA08372@kanga.INS.CWRU.Edu>  
Rendered body type: text/plain

> Are the schematics available in other than post script format?  
I would like to  
> browse or print them but not having a post script print makes  
it a little  
> difficult.If somedoes have them in gif or tif format would  
appreciate it...  
>  
Thanks Dick Scheeringa VE3HDJ  
>  
> dicksch@hookup.net

Dick,

I too wanted to print the DSP-93 schematics on my HP-III (which does not have the postscript cartridge). A friend in Florida gave a copy of GHOScript (about 3.5 MB of zipped files). It works, but I had to cut the resolution to 150 dpi since it needs

1.5 MB of printer memory for full resolution. The copy looked just fine.

It is licensed to the general public. You might try the Internet address; possibly the program can be downloaded.

Aladdin Enterprises  
P.O. box 60264  
Palo Alto, CA 94306  
voice (415)322-0103  
fax (415)322-1734  
...{uunet,decwrl}!aladdin!ghost  
ghost@aladdin.com

73's  
Don, K4JPJ

---

## 68. Re: [DSP-93:622] DSP-93 = no jumpers: IT WORKS!!!

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Mon, 24 Apr 1995 13:52:33 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504242052.NAA09071@hopf.dnai.com>  
Rendered body type: text/plain

Hello Ron and Mark,

>I think you should NOT have to open the pk-232. Just remove the jumpers  
>from the DSP-93 (except for the pullup/pulldown strapping lines).  
>

>Since your PK-232 works with the other modems, it is ready to go with the  
>DSP-93. I think removing the jumpers from the DSP-93 might get you even  
>closer.....keep us posted!

IT WORKS!!!

Mark, you were right. Ron, your remark about not using 20 lines should have tipped me off, as I would have had to use more lines than I had for the jumpering in the DSP-93 to also jumper the PK-232 disconnect header pins, which I told Mark they did..

Also, Ron, your remark about fixing the LED problem first should also have tipped me off.. When I did remove the jumpers in the DSP-93 header, and the LEDs worked, I should have checked to see if the PTT was fixed. But I was soooooo sure that jumper belonged in the DSP-93 I just put the jumpers back and resumed hitting my head against the wall (figuratively, in reality I just mumbled some profanities and grabbed my VTVM again).

The 20 pin header I was jumpering is labeled "TNC" on page 6 of 33, and the pin functions are similarly labeled on page 32 of 33. And it does go to the TNC disconnect header. To avoid others screwing up like I did, the figure on page 32 of 33 should say "inside the tnc". When I viewed that figure I saw it as the line from the DSP-93 20 TNC header to the DB-24 on the rear.

Unfortunately, Mark, I got your nmessage after I did open up my PK-232. That is when I realized I already had these jumpered on the TAPR Modem disconnect pcb. I also traced out the PTT line and discovered the header PTT line goes to an IC that buffers it and permits a higher current to be sunk on the PTT line. I now recall that back when I installed the disconnect board that ability to sink more current (along with the cabling convenience of already having that PTT line in operation in my HF modem cable) made me decide to not use the header line's PTT output. I got the very first TAPR Modem disconnect kit produced, so that was a long time ago, January 1990. My memory has long ago forgot that reason.

Actually the worse part of getting inside my PK-232 is not disconnecting all my modems and switch boxes on top, but getting them connected again, correctly. This time I got it right the first time. As my FSK-500 RTTY/AMTOR modem has an intermittent that disappears whenever it sees me approach it with my VTVM, I just left that one out. I used it for it's sharp two tone filtering, as the PK-232's broad bandpass filtering makes copy under poor band conditions worthless. I will download the RTTY filter I saw discussed here and use that instead. So now I only have three external modems, and not the four I expected.

Thanks to both of you for all your help. Without you I probably would have given up on the DSP-93 by now. Now I need to learn some assembly programming, and wire up the audio filtering line for the RTTY and CW filters..

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

## 69. Re: [DSP-93:625] Re: DSP-93 = no jumpers: IT WORKS!!!

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 24 Apr 1995 18:06:57 -0500  
To: dsp-93@tapr.org  
Message-ID: <abc1df36000210049ed6@[204.181.160.9]>  
Rendered body type: text/plain

Howard,

>Thanks to both of you for all your help. Without you I probably would have  
>given up on the DSP-93 by now. Now I need to learn some assembly  
>programming, and wire up the audio filtering line for the RTTY and CW filters..

Glad to hear the "final" story. Now onward and upward! Feel free to ask for  
help if you need it.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 70. IT WORKS!!!!

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 24 Apr 1995 19:10:54 -40962758 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <9504242310.AA20288@camel.campbell.edu>  
Rendered body type: text/plain

Hurray Howard!!!!!! Glad you kept after it. You will like it a lot,  
is my guess.

Yes, I too am looking forward to the internal TNC, but until then,  
I'll use what is at hand.

Don't forget about the o'scope, the spec. analyzer, w9gr code, ao-13  
telem. code, etc. etc. etc!!! There is a lot to do that doesn't take  
another TNC-type device to work.

Have fun....yes, we need to improve/reword that picture. I saw your  
confusion....glad you saw it too!

>  
> Hello Ron and Mark,  
>  
> >I think you should NOT have to open the pk-232. Just remove the jumpers  
> >from the DSP-93 (except for the pullup/pulldown strapping lines).  
> >  
> >Since your PK-232 works with the other modems, it is ready to go with the  
> >DSP-93. I think removing the jumpers from the DSP-93 might get you even  
> >closer.....keep us posted!  
>  
> IT WORKS!!!  
>  
> Mark, you were right. Ron, your remark about not using 20 lines should have  
> tipped me off, as I would have had to use more lines than I had for the  
> jumpering in the DSP-93 to also jumper the PK-232 disconnect header pins,  
> which I told Mark they did..  
>  
> Also, Ron, your remark about fixing the LED problem first should also have  
> tipped me off.. When I did remove the jumpers in the DSP-93 header, and the  
> LEDs worked, I should have checked to see if the PTT was fixed. But I was  
> soooooo sure that jumper belonged in the DSP-93 I just put the jumpers back  
> and resumed hitting my head against the wall (figuratively, in reality I  
> just mumbled some profanities and grabbed my VTVM again).  
>  
> The 20 pin header I was jumpering is labeled "TNC" on page 6 of 33, and the  
> pin functions are similarly labeled on page 32 of 33. And it does go to the  
> TNC disconnect header. To avoid others screwing up like I did, the figure  
> on page 32 of 33 should say "inside the tnc". When I viewed that figure I  
> saw it as the line from the DSP-93 20 TNC header to the DB-24 on the rear.  
>  
> Unfortunately, Mark, I got your nmessage after I did open up my PK-232. That  
> is when I realized I already had these jumpered on the TAPR Modem disconnect



> pcb. I also traced out the PTT line and discovered the header PTT line goes  
> to an IC that buffers it and permits a higher current to be sunk on the PTT  
> line. I now recall that back when I installed the disconnect board that  
> ability to sink more current (along with the cabling convenience of already  
> having that PTT line in operation in my HF modem cable) made me decide to  
> not use the header line's PTT output. I got the very first TAPR Modem  
> disconnect kit produced, so that was a long time ago, January 1990. My  
> memory has long ago forgot that reason.  
>  
> Actually the worse part of getting inside my PK-232 is not disconnecting all  
> my modems and switch boxes on top, but getting them connected again,  
> correctly. This time I got it right the first time. As my FSK-500  
> RTTY/AMTOR modem has an intermittent that disappears whenever it sees me  
> approach it with my VTVM, I just left that one out. I used it for it's  
> sharp two tone filtering, as the PK-232's broad bandpass filtering makes  
> copy under poor band conditions worthless. I will download the RTTY filter  
> I saw discussed here and use that instead. So now I only have three  
> external modems, and not the four I expected.  
>  
> Thanks to both of you for all your help. Without you I probably would have  
> given up on the DSP-93 by now. Now I need to learn some assembly  
> programming, and wire up the audio filtering line for the RTTY and CW filters..  
>  
> 73  
> Howard Sodja, W6SHP In the SF Bay area  
> AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
> Microsats @ KO-23 and AO-16  
> w6shp@amsat.org  
>  
>

--  
Mark L. Hammond, KC4EBR  
hammond@camell.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

## 71. DSP-93 heatstroke

From: Mills@huey.udel.edu  
Date: Mon, 24 Apr 95 20:47:59 EDT  
To: dsp-93@tapr.org  
Message-ID: <9504242047.aa08221@huey.udel.edu>  
Rendered body type: text/plain

Folks,

Hopefully, the following tail of woe may wag a dog or two. Pun intended.  
I have mounted serious attack on DSP-93 heatstroke problem mentioned in  
my last. It wasn't only my huge modem program that fell victim. Other  
programs in the DSP-93 software distribution fail as well, including the  
oscilloscope instrument, function generator and SPEEDTST program. After  
a few seconds running with cover on, these programs freeze up or crash  
with LED 1 on, but not running the normal monitor program. In the case  
of the SPEEDTST program, this occurs after only a few seconds of output.  
The problem is getting worse; it now happens after a few minutes with  
the cover off.

I disassembled the thing and painstakingly prodded, poked and generally  
tortured every pin on every IC and connector and reseated every IC on  
both boards. I swapped the SRAM chips to see if the problem is memory  
dependent. I poked at every signal on the interboard connectors to  
verify correct voltages and pulse waveshapes. I stood the stack on end,  
rapped it smartly on the table, and flexed each board while running the  
SPEEDTST program. I found no discoloration or other evidence of  
overheating. I felt and sniffed everywhere, but found no particular hot  
spots. I did find a potential unrelated problem where the CPU would  
sometimes reset when I turned the stack sideways, but not when normally  
upright (!). I traced that one to a U116 conspiracy where pin 7 managed  
sometimes to dangle in the socket without touching either prong of the  
socket pin.

My hunch is that one of the 22V10 PALs U112 or U113 may have a problem,  
possibly timing dependent and exacerbated by temperature. Can I ask the  
TAPR folks, pretty please, to send me replacements for these? I will of

course return them if not the problem. I dread the thought that one of the boards might have a whisker on an inside layer. I still have found no explanation of the noxious odors coming from the stack when I first fired up.

Dave Mills, W3HCF  
43 The Horseshoe  
Newark, DE 19711

---

## 72. Hotshot HF FSK modem update

From: Mills@huey.udel.edu  
Date: Mon, 24 Apr 95 20:50:14 EDT  
To: dsp-93@tapr.org  
Message-ID: <9504242050.aa08229@huey.udel.edu>  
Rendered body type: text/plain

Folks,

I have updated the HF FSK modem mentioned a couple of weeks ago to include TNC functions, so the unit can operate directly from a terminal program in the PC without an external TNC. It does Baudot/ASCII translation, LF insertion following CR on transmit, echo-as-sent, and operates down to 10 baud for both transmit and receive. The intent of the lower rates is to experiment in weak signal modes where the extra 6dB or so of coding gain from the matched filter plus another 6dB at the reduced rate should give clean copy when you can just barely make out the signal is there by ear. Note that the radio stability and tuning resolution at the lower rates may require something better than the 10-Hz tuning steps found on most equipment. Obviously, AFC is on my list, along with other problems detailed in the readme.txt file.

The software is on host louie.udel.edu and path pub/ntp/modem.zip or pub/ntp/modem.tar.Z, according to your taste. If anybody fires it up, I'd like to know. I have another agenda to encourage that. My DSP-93 apparently is susceptible to heatstroke - it freezes up after a few minutes with the cover on running either my modem program or the scope utility that comes with the DSP-93 distribution. To be absolutely sure the problem is not some obscure rascal in my program, I'd like to know if the program runs in another DSP-93 for some time, like overnight, without freezing up. The d1 command splices the speaker jack to the audio input via the A/D and D/A converters; if the receiver audio isn't heard, the program has probably died. That little favor would be much appreciated.

Dave, W3HCF

---

## 73. Re: [DSP-93:629] Hotshot HF FSK modem update

From: fperkins@onramp.net  
Date: Mon, 24 Apr 1995 21:17:52 -0500  
To: dsp-93@tapr.org  
Message-ID: <199504250217.VAA16953@ns.onramp.net>  
Rendered body type: text/plain

The feature set of your program is maturing very quickly. I'll try to run it overnight this weekend if someone else can't get to it first.

73 Frank

---

## 74. Re: [DSP-93:629] Hotshot HF FSK modem update

From: Roy Welch <rdw@crl.com>  
Date: Mon, 24 Apr 1995 19:31:09 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950424192853.27837A-100000@crl6.crl.com>  
Rendered body type: text/plain

I have tried several times to get the HF modem files from louie.....but it is always closed. I connect immediately but receive the message that the host is closed. This is during the day and also in the evening. Any thoughts?

73, Roy -- W0SL

---

## 75. Re: [DSP-93:629] Hotshot HF FSK modem update

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 25 Apr 1995 02:53:16 +0000  
To: dsp-93@tapr.org  
Message-ID: <9504250248.AA21588@camel.campbell.edu>

Rendered body type: text/plain

Dave, I worked like the dickens last nite to get my pk232 about ready to go, but left the power plug and supply at work....arghh...

S000...glad your new version is a TNC-free piece of code!

I have it running now. Nice program....trying to remember what "regular old ham rtty" baud and shift is...

It is displaying characters, but not QSOs (not finding any)....but at least I can give you the overnite test. Will let you know.

>Folks,

>

>I have updated the HF FSK modem mentioned a couple of weeks ago to  
>include TNC functions, so the unit can operate directly from a terminal  
>program in the PC without an external TNC. It does Baudot/ASCII

// good stuff gone.

>

>Dave, W3HCF

>

>

Mark L. Hammond [KC4EBR]

---

## 76. Now printing with-> Hotshot HF FSK modem update

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 25 Apr 1995 03:15:37 +0000  
To: dsp-93@tapr.org  
Message-ID: <9504250311.AA21736@camel.campbell.edu>  
Rendered body type: text/plain

Well, found what looks like an ARRL bulletin on propagation....printing like crazy, Dave. Good job!

It is working like a charm....couple of comments to the other nubies:

1) put your radio in LSB (at least for my Knwd TS-450SAT)

2) use "b4" which is 45.45 baud for the ARRL bulletins.

3) use "d1" to hear and tune your radio receive audio thru the DSP-93 to your DSP-93 attached speaker.

I found them on 3.62189 MHz. Printing like crazy.

Will test it out after an all nite run. Mine has been running your code for over 15mins so far. No problems.

Oh, by the way, I was using D93WE at default params as my terminal prog, downloaded the modem.obj directly from D93WE pulldown menu, running 2.16 eproms here.

Having fun on HF again.....

>

>It is displaying characters, but not QSOs (not finding any)....but at least I  
>can give you the overnite test. Will let you know.

>

>

>

Mark L. Hammond [KC4EBR]

---

## 77. Re: [DSP-93:631] Re: Hotshot HF FSK modem update

From: Mills@huey.udel.edu  
Date: Tue, 25 Apr 95 2:01:02 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9504250201.aa10084@huey.udel.edu>  
Rendered body type: text/plain

Roy,

Very surprising news. Thanks for the heads up. I will pass your message to our system staff. It should be resolved really quick.

Dave

---

## 78. Re: [DSP-93:632] Re: Hotshot HF FSK modem update

From: Mills@huey.udel.edu  
Date: Tue, 25 Apr 95 2:08:04 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9504250208.aa10128@huey.udel.edu>  
Rendered body type: text/plain

Mark,

Yummy. Thanks for the warm support. Note that much of my testing was with CHF Halifax, which has a rather cavalier notion of shift. They come up sometimes at 575 Hz RTTY and sometimes something else. Their transmitters are used for both RTTY and WEFAX, from which I guess the baseband DC loop may not be well calibrated.

Dave

---

## 79. HF modem hanging tough-10 hour report

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 25 Apr 1995 08:19:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <9504251312.AA23338@camel.campbell.edu>  
Rendered body type: text/plain

Dave,

Your code is surely sound. I ran it all nite, and while there was not rtty to be found on my dash to work, it still was passing audio quite nicely. All of the "d" commands still worked, and when I cranked up the volume it started to print garbage, so it looks good to me.

Have you ever worked for Timex? ;)

Now, we need to get your DSP-93 up to snuff. Wish I had extra parts for you....

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 80. Re: [DSP-93:628] DSP-93 heatstroke

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 25 Apr 1995 09:35:59 -0500  
To: dsp-93@tapr.org  
Message-ID: <abc2b7b8000210047d6e@[204.96.0.35]>  
Rendered body type: text/plain

Dave,

>Hopefully, the following tail of woe may wag a dog or two. Pun intended.  
>I have mounted serious attack on DSP-93 heatstroke problem mentioned in  
>my last.

Have you put a scope on the various 5V power lines (Digital +5, Analog +5, etc.)? On my unit, I had a 100 mV or so 60Hz dip in my supply (can't remember which one). The filter caps did not hold the input voltage to the 7805's quite high enough and the dips cam through. There are places on the digital board (C121 and C122) for extra caps. I also tack soldered an additional cap on the analog board also (just to make sure).

Perhaps as your regulators warm up, you are losing regulation.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 81. Re: [DSP-93:636] HF modem hanging tough-10 hour report

From: Mills@huey.udel.edu  
Date: Tue, 25 Apr 95 15:21:21 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9504251521.aa12712@huey.udel.edu>  
Rendered body type: text/plain

Mark,

That's good news and thanks.

Dave, W3HCF

---

## 82. Re: [DSP-93:637] Re: DSP-93 heatstroke

From: Mills@huey.udel.edu  
Date: Tue, 25 Apr 95 15:47:59 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9504251547.aa12779@huey.udel.edu>  
Rendered body type: text/plain

Ron,

I checked the voltages with DVM and scope and found nary a ripple on either 5-V supply. The 12-V supply does have a small ripple, but that shouldn't affect the DSP or external memory bus.

Dave

---

## 83. Phone modem mutes DSP-93

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Tue, 25 Apr 1995 23:03:39 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504260603.XAA24400@hopf.dnai.com>  
Rendered body type: text/plain

Hello DSP-93'ers

This past weekend, during my flurry of DSP-93 tests and internet messages I noticed a strange problem that probably has an easy solution. My DSP-93 always responded appropriately to either DOS or Windows (d93we.exe) commands. I then logged onto the internet, got and sent my mail, and returned to test the latest ideas that I downloaded from my DSP mentors. But now my DOS and Windows commands were ignored. D93we did not show the "\*" when the DSP-93 was turned on or reset.

Fortunately the fix is easy, just reboot and the "\*" prompt returns, and everything works again, until my next internet connection. Obviously something is happening that is preventing my computer from communicating with the DSP-93 after I use my phone modem.

My commport set-up is as follows:

| Com | Device  | I/O adr  | IRQ | I/O speed |
|-----|---------|----------|-----|-----------|
| --- | -----   | -----    | --- | -----     |
| 1   | DSP-93  | 3f8-3ff  | 4   | 19200     |
| 2   | PK-232  | 2f8-2ff  | 3   | 9600      |
| 3   | Trakbox | 3e8-3ef  | 4   | 9600      |
| 4   | Modem   | 2e8-02ef | 3   | 38400     |

I use a U.S. Robotics Sportster 14.4 KB modem and connect to the internet with Chameleon, running Netscape and Eudora for mail. My I/O card is a 16550 clone (16552), by SIIG, their I/O Professional model.

My leading suspect is the I/O speed change. When I reboot, it is reset to 19200 until I run the modem. Is there some way to force it to 19200? I do not know why a speed change on Com 4 should effect com 1, tho. The PK-232 and Trakbox operate ok, so maybe this is not the bug.

I tried turning off my modem and closing and reopening d93we. I cannot think of any other things to try.

Any ideas or suggestions? The fun never stops!

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

## 84. FT-736R documentation

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Wed, 26 Apr 1995 23:05:43 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504270605.XAA28749@hopf.dnai.com>  
Rendered body type: text/plain

Hello Ron,

Yes I will be glad to write up the FT-736R info. I will give credit to the 9600 baud mods to G3RUH. I have a copy of his mod for other rigs as well, if you need this info. On the 75 meter AMSAT net we occasionally have new satellite enthusiasts who need this info, so I filed this document away so I can be of help when needed.

I'll try to get my 736 mod article out ASAP. It is the least I can do for the help you gave me, and for the dumb questions I will undoubtedly be asking in the future.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

## 85. Re: [DSP-93:640] Phone modem mutes DSP-93

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)  
Date: Thu, 27 Apr 95 07:55:51 CDT  
To: dsp-93@tapr.org  
Message-ID: <9504271255.AA05702@eagle.aud.alcatel.com>  
Rendered body type: text/plain

Howard sodja writes:

> Hello DSP-93'ers  
>  
> This past weekend, during my flurry of DSP-93 tests and internet messages I  
> noticed a strange problem that probably has an easy solution. My DSP-93  
> always responded appropriately to either DOS or Windows (d93we.exe)  
> commands. I then logged onto the internet, got and sent my mail, and  
> returned to test the latest ideas that I downloaded from my DSP mentors.  
> But now my DOS and Windows commands were ignored. D93we did not show the  
> "\*" when the DSP-93 was turned on or reset.  
>  
> Fortunately the fix is easy, just reboot and the "\*" prompt returns, and  
> everything works again, until my next internet connection. Obviously  
> something is happening that is preventing my computer from communicating  
> with the DSP-93 after I use my phone modem.  
>  
> My comport set-up is as follows:  
>  
>     Com   Device       I/O adr   IRQ I/O speed  
>     ---    -----       -----   - - - - -  
>       1     DSP-93       3f8-3ff    4   19200  
>       2     PK-232       2f8-2ff    3    9600  
>       3     Trakbox       3e8-3ef    4    9600  
>       4     Modem        2e8-02ef   3   38400  
>  
> I use a U.S. Robotics Sportster 14.4 KB modem and connect to the internet  
> with Chameleon, running Netscape and Eudora for mail. My I/O card is a  
> 16550 clone (16552), by SIIG, their I/O Professional model.  
>  
> My leading suspect is the I/O speed change. When I reboot, it is reset to  
> 19200 until I run the modem. Is there some way to force it to 19200? I do  
> not know why a speed change on Com 4 should effect com 1, tho. The PK-232  
> and Trakbox operate ok, so maybe this is not the bug.  
>  
> I tried turning off my modem and closing and reopening d93we. I cannot  
> think of any other things to try.  
>  
> Any ideas or suggestions? The fun never stops!  
>  
> 73  
> Howard Sodja, W6SHP In the SF Bay area  
> AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
> Microsats @ K0-23 and A0-16  
> w6shp@amsat.org  
>  
>

Howard: the D93WE program resets the COM port by calling the windows driver to initialize the com channel. So, it would reset the speed no matter how it got set before. You do not say whether your 14.4 modem is external, or is an internal plug-in card. If it is the latter, then I will hazzard a guess that the modem software is modifying either the I/O address or the interrupt driver, and not restoring it upon exiting. If that is the case, then then there is no way for DOS or WINDOWS software to properly restore it. And you are stuck with rebooting.

- Tom, N5EG

|                                        |                            |
|----------------------------------------|----------------------------|
| Tom McDermott                          | "All opinions expressed    |
| Alcatel Network Systems, Inc.          | are my own, and do not     |
| mcdermot@aud.alcatel.com               | represent those of Alcatel |
| [ ICC'96 Technical Program Secretary ] | Network Systems, Inc."     |
| [ June 23-27, 1996, Dallas, Tx. ]      |                            |

## 86. Re: [DSP-93:641] FT-736R documentation

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 27 Apr 1995 10:55:17 -0500  
To: dsp-93@tapr.org  
Message-ID: <abc56e7800021004a091@[204.181.160.74]>  
Rendered body type: text/plain

>Hello Ron,  
>  
>Yes I will be glad to write up the FT-736R info. I will give credit to the  
>9600 baud mods to G3RUH. I have a copy of his mod for other rigs as well,  
>if you need this info. On the 75 meter AMSAT net we occasionally have new  
>satellite enthusiasts who need this info, so I filed this document away so I  
>can be of help when needed.

That's great! We have a lot of 9600 conversion info on the DSP-93  
diskettes already. If you have stuff that's not there, please make it  
available.

>I'll try to get my 736 mod article out ASAP. It is the least I can do for  
>the help you gave me, and for the dumb questions I will undoubtedly be  
>asking in the future.

The more we work together ...

Ron W5RKN

also:  
w5rkn@amsat.org

## 87. Re: [DSP-93:629] Hotshot HF FSK modem update

From: sodja@hopf.dnai.com (Howard Sodja)  
Date: Sat, 29 Apr 1995 21:41:15 -0700  
To: dsp-93@tapr.org  
Message-ID: <199504300441.VAA29512@hopf.dnai.com>  
Rendered body type: text/plain

Hello Dave,

>The software is on host louie.udel.edu and path pub/ntp/modem.zip or  
>pub/ntp/modem.tar.Z, according to your taste. If anybody fires it up,

Is this address correct or is there a typo error? I have been trying every  
night for the past week, and during the day today several times. I always  
get "unable to connect".

Could your software be put on the TAPR system so I can FTP it from tapr.org?

Also I wonder if you have a port 2 version? It seems most DSP-93 programs  
are port 1 only, and it will be a while before I will be able to hack them  
for port 2. I want port 1 to be for my vhf/uhf rig, and port 2 for my hf rig.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605

**88. Re: [DSP-93:644] Re: Hotshot HF FSK modem update**

From: Mills@huey.udel.edu  
Date: Sun, 30 Apr 95 1:43:18 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9504300143.aa00470@huey.udel.edu>  
Rendered body type: text/plain

Howard,

I will pass your problem to our system crew. In the past, there have been problems when some suspect hacker has tried to break in our ftp service from some j-random domain, in which case the system staff has blocked subsequent access from that domain. It could be your domain has been blocked due to some other perpetrator. I will check and remove the block, should that be the case. Meanwhile, the hack for port-2 should be easy. Standby.

Dave

---



# May 1995

Original source file: dsp.9505

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/dspsig/mail\\_archive/dsp.9505](http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9505)

## 1. Re: [DSP-93:644] Re: Hotshot HF FSK modem update

From: kc5ejk@onramp.net (Robert Winingham)  
Date: Mon, 1 May 1995 00:06:26 -0500  
To: dsp-93@tapr.org  
Message-ID: <v01510102abca1c214dee@[199.1.11.138]>  
Rendered body type: text/plain

>Hello Dave,  
>  
>>The software is on host louie.udel.edu and path pub/ntp/modem.zip or  
>>pub/ntp/modem.tar.Z, according to your taste. If anybody fires it up,  
>  
>Is this address correct or is there a typo error? I have been trying every

I found the file but I did have a problem with the path. Used Fetch 2.1.2  
I left off the path and just worked my way down after connecting.

Thanks  
Bob KC5EJK Dallas

---

## 2. HF modem stuff

From: Mills@huey.udel.edu  
Date: Mon, 1 May 95 23:15:38 EDT  
To: dsp-93@tapr.org  
Message-ID: <9505012315.aa07687@huey.udel.edu>  
Rendered body type: text/plain

Folks,

The HF FSK modem previously announced has sprouted dual-port capability, fancy buffering, and transmitter PTT and tuning controls. Also, the carrier-detect gate is much more reliable. I'm still not completely satisfied with the synchronous mode - the phase-lock loop sometimes derails when my experience says it shouldn't. On my shortlist is a truly linear discriminator (for FAX), buffer flow controls, crossport repeat and AMTOR mode B. The huge coding gain (I calculate almost 27dB) using matched filtering and Viterbi decoding might make mode A seldom necessary.

The distribution modem.zip or modem.tar.Z is in the pub/ntp directory on louie.udel.edu. Some of you have complained that old horse is feeding sometimes on other grasses. If you are coming from America Online, CompuServe or other huge domain, be advised that occasional hackers, like guys trying to find the root password, result in access denial for the entire domain. We have to unplug that manually; so, please advise if louie comes a black hole and we will fix it.

Dave

---

## 3. Re: Help!!

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 2 May 1995 16:09:16 -0500  
To: dsp-93@tapr.org  
Message-ID: <abcc4f52000210047fd5@[204.96.0.132]>  
Rendered body type: text/plain

The following was sent to Greg. I believe a version of this was posted earlier here. I am at a loss for suggestions. Can anyone else help?

Ron

>From: dmedley@dconcepts.com  
>To: gjonas@TENET.EDU  
>Subject: Re: Help!!  
>Organization: Digital Concepts BBS - TELNETable!  
>Date: Tue, 02 May 95 10:23:03 EST  
>Status:  
>  
>  
>Well Bless your heart Mr President. When all else fails go to the top.  
>I really hope you all had a great time at Dayton and I was really sorry  
>not to be able to be there but we have just returned from 3 months

>overseas and apart from being out of funds we were tired of being on the  
>road.  
>Greg to try and be brief. The DSP was working great when I left here in  
>January and it continued to do so until I reached New Zealand and while  
>Ian Ashley and I were playing with it it locked up and subsequently  
>refused to boot. We did not have time to investigate but when I got it  
>home here it was dead. On investigation I found the two 7805 VRs had  
>suffered fatigue failures at the pins and the fuse on the digital board  
>had blown. I replaced the VRs (with some difficulty) and the voltages  
>are correct but it still does not boot. Separating the boards and  
>powering up the analog board alone all lights light. As far as I have  
>been able to tell this is due to a 3.5 volt presence on the data lines.  
>Anyway I don't know what else I can do without some very expert  
>instructions and I have not been able to get any response from Bob for  
>ten days now. One suggestion was to get a new set of EPROMS and GALs on  
>the assumption that mine got zapped by an X-ray machine during my  
>travels but this does not seem to have anything to do with the lights  
>all lighting. With my limited resources and those of the electronic  
>shops in Tucson I have replaced the simpler devices on the analog board  
>with no improvement.  
>I am not sure what I need, Greg. That is the problem. When I was in  
>trouble originally with the blank EPROM Bob sent me some pretty specific  
>instructions as to what to look for with a probe and this is what I  
>need first up to try and isolate the problem. I have the necessary  
>equipment like scopes, probes, DVM etc. I really would like to fix this  
>thing myself so that I will be able to understand it better and perhaps  
>to help others later.  
>Sorry for this long dissertation, Greg, but you can see I am at my wits  
>end!!!  
>73 Dave  
>

Ron W5RKN

also:  
w5rkn@amsat.org

---

#### 4. Re: [DSP-93:648] Re: Help!!

From: Roy Welch <rdw@crl.com>  
Date: Tue, 2 May 1995 17:37:24 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: ki6qe@amsat.org  
Message-ID: <Pine.SUN.3.91.950502173459.20037A-100000@crl.crl.com>  
Rendered body type: text/plain

Dave, when you power up the dsp, I assume the Pwr led lights and led 1  
flickers two or three times and then stays on. Is this much OK?

73, Roy -- W0SL

---

#### 5. Re: Woe is me!!

From: bstrick@plano.net (Bob Stricklin)  
Date: Tue, 2 May 1995 22:07:45 -0500  
To: DSP-93@tapr.org  
Message-ID: <9505030307.AA13663@dns>  
Rendered body type: text/plain

Dave, here is a message I sent some time ago and it must not have made it to  
you. Have a look at it and give us all some feedback on what your current  
board state is. I am checking my mail almost everyday and will give you more  
hits about what to look for.

>To: dmedley@dconcepts.com  
>From: bstrick@plano.net (Bob Stricklin)  
>Subject: Re: Woe is me!!  
>Cc:  
>Bcc:  
>X-Attachments:  
>  
>

>>they resulted in complete breakaway. This unit, of course, has spent  
>>many hours being bounced around in airplanes and baggage handling  
>>systems to say nothing of various scanners and x-ray devices.  
>

>You may want to mount the VREGs on the bottom of the box and run short  
wires up to the board. Especially if you are going to travel around with it.  
Had planned a heat sink that would have supported the VREGs better but we cut  
a corner on cost. The -5 Reg would have to be insulated from the case.  
>

```

>> The +5 and -5 voltages measure OK but the pin
>>marked +9 volts reads +13.5 and all the leds light (except the leftmost
>>2).
>
>This is ok. The +9 was a guess. I should have taken that off. Sounds like
your Vregs are working ok. Sounds like some kind of a computer problem now.
>
> From this I assume there has probably been some failure in an IC
>>and I would appreciate some advice from you as to what to do next. I
>>had suspected, and still do, that there has been a failure in an
>>internal connection in the circuit board but that is only a suspicion.
>
>I would be suprised if you have an internal short.
>
>Xray may have erased you GALs U112 or U113.
>
>More likely that you have a solder joint problem or a bad chip that failed
when you were having power supply problems.
>
>Where are you now?
>
>Do you have a logic probe or Scope?
>
>Power up the digital board by itself. Look for pulses on JP103. These occur
when the DSP writes the SIO setup and sets the leds. Happens when you hit
reset. Look at schematic for exact pins. Pulses are short. This will tell
you your digital board is working. Look for a short pulse on pin 18 of the
UART after power up or reset. Then look for steady pulses, about 2 per
second, on pins 21 and 25. Digital board is working and checking the UART
for data if you see this.
>
>Then pull all the chips from your analog board and start adding them.
>
>Add them in this order;
>
>1 U216 and U212 and U204. Should see diffetent acction on some leds.
>
>2 U206 Two more leds are added and may change.
>
>3. U212 and U211 Should have serial port.
>
>The rest in any order you like.
>
>Hope this helps.
>
>
Bob Stricklin, N5BRG

```

---

## 6. GAL 22v10 advice

```

From: Mills@huey.udel.edu
Date: Wed, 3 May 95 10:01:54 EDT
To: dsp-93@tapr.org
Message-ID: <9505031001.aa15133@huey.udel.edu>
Rendered body type: text/plain

```

DSP-93 guys,

I have so far not found the source of heatstroke of DSP-93 reported previously. The thing just conks out when the ambient temperature rises a few degrees. I am advised the problem could be marginal timing budgets for setup, hold times, etc. So, I believe I have no choice but to swap components, assuming there is a marginal one onboard. My first target is the GAL 22v10s on the digital board; however, the fastest part, rated at 10 ns, is \$18 each. Can you advise the speed of the rated parts? I do have the facilities to copy the fuze map, assuming you won't prosecute me for copyright infringement.

Dave, W3HCF

---

## 7. Re: [DSP-93:651] GAL 22v10 advice

```

From: bstrick@plano.net (Bob Stricklin)
Date: Wed, 3 May 1995 12:50:18 -0500
To: dsp-93@tapr.org
Message-ID: <9505031750.AA01351@dns>
Rendered body type: text/plain

```

```

>DSP-93 guys,
>

```

>I have so far not found the source of heatstroke of DSP-93 reported  
>previously. The thing just conks out when the ambient temperature  
>risers a few degrees. I am advised the problem could be marginal  
>timing budgets for setup, hold times, etc. So, I believe I have no  
>choice but to swap components, assuming there is a marginal one  
>onboard. My first target is the GAL 22v10s on the digital board;  
>however, the fastest part, rated at 10 ns, is \$18 each. Can you  
>advise the speed of the rated parts? I do have the facilities to  
>copy the fuze map, assuming you won't prosecute me for copyright  
>infringement.

>

>Dave, W3HCF

>

Hi Dave,

The GALs you have should be 10 ns devices. We are switching to 15 ns on the next build. Limited test have shown that this is not a problem. So I do not think this is your problem. Also I do not think you can read the GAL code. It should have the security fuse set. If you would like to try a different set of GALs post me your address and I will mail you a set. You should send the ones you have back by mail.

Have you looked at the power supply voltage after your unit heats up?

Also measure the current pull from the transformer and report it. We have some data on this and your current may tell us if your unit has a problem. Post your measurement and I will post a couple of readings for you later.

What happens to your unit when it quits working?

After it warms up make sure the clock is still working and the reset line is stable in the high state.

---

## 8. Re: [DSP-93:652] Re: GAL 22v10 advice

From: Mills@huey.udel.edu  
Date: Thu, 4 May 95 0:37:24 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9505040037.aa17633@huey.udel.edu>  
Rendered body type: text/plain

Bob,

I hadn't realized you were sensitive about 22v10 equations. The CPU board by itself pulls 0.45A RMS, while the analog board is 0.64A when separated by itself and 0.59A when joined in the stack. The 5V rail on both boards is 5.00V DC under all conditions, working or hung. I checked the waveforms on JP201 and JP202, both when working and hung. The address and data bus signals looked normal in both cases. The FSX, DX, CLKX, FSR, DR, CLKR signals were as expected in both cases. The clock signals were also normal.

Once started in normal ambient temperature, the program runs normally, even for days. I then covered the stack with transparent plastic wrap to keep in the heat. After a few minutes the LEDs (which normally flash with signals) and AIO output (which normally generates the AFSK and test signals) quits. For all intensive purposes, it looks like the CPU hangs on an unclearable interrupt or otherwise appears to loop in place (the bus signals continue to look normal, but that's hard to verify without a logic analyzer. One ominous observation is that the program does not resume once the stack is cooled down; it takes a reset and reboot.

The thing which is so frustrating here is that most useful information is lost after the reset - the monitor clobbers just about everything. A useful feature would be that, upon reset, the monitor would copy B0, B1, B2 and the portion of external data memory it uses somewhere where it doesn't sit and leave that for later display. The most frustrating thing of all is that I don't have access to the monitor source, so don't know what it really does after reset.

I would in fact much appreciate a GAL 22v10 swap. My address is

43 The Horseshoe  
Newark, DE 19711

Thanks for your help in all this. You guys are heroes.

Dave, w3hcf

---

## 9. Interesting DX signal

From: Mills@huey.udel.edu  
Date: Thu, 4 May 95 0:43:50 EDT  
To: dsp-93@tapr.org  
Message-ID: <9505040043.aa17670@huey.udel.edu>  
Rendered body type: text/plain

Bob,

Further to my last. I discover that JP202 pin 10 (the DX signal) isn't what one would expect to be a clean waveform. I expect a pulse on this pin with a PRF of 125 us (8kHz sample rate in my case). What I get is what I might expect from a blocking oscillator (anybody remember what these were for?). A negative pulse followed by a positive-going ramp. Is this a violation of the Principle of Least Astonishment?

Dave

---

## 10. still active ?

From: ljs@rain.org (L.J.Shepherd)  
Date: Tue, 09 May 1995 19:25:24 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505100220.TAA19728@coyote.rain.org>  
Rendered body type: text/plain

I have received no traffic from DSP-93@tapr.org for about two weeks.....  
is the server still active ?

73, Jim K6OYY

---

## 11. Re: [DSP-93:655] still active ?

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 9 May 1995 22:39:22 -40962758 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <9505100239.AA25377@camel.campbell.edu>  
Rendered body type: text/plain

must be! ;)

--

Mark L. Hammond, KC4EBR  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 12. Re: [DSP-93:655] still active ?

From: hobson@rain.org (John Hobson)  
Date: Tue, 09 May 1995 19:58:42 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505100258.TAA25519@coyote.rain.org>  
Rendered body type: text/plain

>I have received no traffic from DSP-93@tapr.org for about two weeks.....  
>is the server still active ?

>

>

73, Jim K6OYY

Think so....

John Hobson  
Santa Barbara, CA

---

## 13. RE: [DSP-93:655] still active ?

From: "Beaudry, Tom" <BEAUDRTM@dun.nielsen.com>  
Date: Wed, 10 May 95 07:52:00 PDT  
To: dsp-93 <dsp-93@tapr.org>  
Message-ID: <2FB0D398@mailgate.dun.nielsen.com>  
Rendered body type: text/plain

I was wondering the same thing.

73, Tom K8LA/YS1ZTM  
Tom\_Beaudry@tvratings.com

-----  
From: dsp-93

---

To: dsp-93  
Subject: [DSP-93:655] still active ?  
Date: Tuesday, May 09, 1995 9:37PM

I have received no traffic from DSP-93@tapr.org for about two weeks.....  
is the server still active ?

73, Jim K6OYY

---

## 14. My DSP problem

From: Roy Welch <rdw@crl.com>  
Date: Wed, 10 May 1995 17:26:46 -0700 (PDT)  
To: DSP-93 Info <dsp-93@tapr.org>  
Message-ID: <Pine.SUN.3.91.950510171348.16902C-100000@crl3.crl.com>  
Rendered body type: text/plain

Bob, today I powered up the DSP93 and measured the 5 volt level as follows:

|                 | Cover OFF (cool) | cover on (hot) | cover off again (hot) |
|-----------------|------------------|----------------|-----------------------|
| DSP93 Reset     | 4.93             | 4.92           | 4.93                  |
| PSK_93AI loaded | 4.91             | 4.84           | 4.85                  |

Cover off, cool was measured first, the cover put on and let sit for an hour. LEDs 5,6,7 & power were on. After the cover was put on and the box heated up, LED 4 began to flicker randomly. Up to this time the DSP did not reset itself. I tried several times by resetting and reloading the modem.

I then took the cover off again and left the room with the modem loaded. After an hour I came back to find the DSP reset. I tried to load the modem again and the dsp immediately reset itself after the LEDs flickered at the end of the loading. I checked the reset lead on the scope and it remained high through the reset so nothing was pulsing the reset lead.

All testing was done with no connections to the DSP93 except the serial port to the PC.

73, Roy

---

## 15. Re: [DSP-93:659] My DSP problem

From: Mills@huey.udel.edu  
Date: Wed, 10 May 95 23:25:12 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9505102325.aa15892@huey.udel.edu>  
Rendered body type: text/plain

Roy,

O golly. I thought mine was the only problem like that. Your voltages are a bit less than mine (5.00V on the nose), but I get the same kind of symptoms. See my earlier message to this list to confirm what I did to expose the rascal, but so far it remains obscure.

Dave W3HCF

---

## 16. SIG still active

From: ljs@rain.org (L.J.Shepherd)  
Date: Wed, 10 May 1995 22:14:23 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505110509.WAA22067@coyote.rain.org>  
Rendered body type: text/plain

Thanks to all who responded to my inquiry regarding activity in this group.  
Guess I just happened to comment at a slow period.....

73, Jim K6OYY

---

## 17. Re: [DSP-93:660] Re: My DSP problem

From: Roy Welch <rdw@crl.com>  
Date: Wed, 10 May 1995 22:16:45 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950510220720.9119A-100000@crl.crl.com>  
Rendered body type: text/plain

On Wed, 10 May 1995 Mills@huey.udel.edu wrote:

> Roy,  
>  
> O golly. I thought mine was the only problem like that. Your voltages are  
> a bit less than mine (5.00V on the nose), but I get the same kind of  
> symptoms. See my earlier message to this list to confirm what I did  
> to expose the rascal, but so far it remains obscure.  
>  
> Dave W3HCF

Dave, mine worked fine until a week ago. I initially blamed it on finger poking at Dayton, which could still be, but I don't know for sure. I remember seeing something now that you mention it, but I don't have those messages any longer. As I recall, you seperated the boards for some testing. Did you isolate it to either board and what chips have you substituted if any. I substituted the U205 chip since my first indication was the modem resetting with PTT. Now however it happens to the PSK modem just by loading it. Are you having the same symptoms?

What voltage do you measure across the .22 ohm resistor (R210) with both boards stacked and PSK\_93AI loaded? Reset? By expose, do you mean you found the problem?

73, Roy -- W0SL

---

## 18. Re: [DSP-93:661] SIG still active

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 11 May 1995 02:11:01 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199505110711.CAA15580@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

My guess is that this is a the lul before the storm....the TAPR staff and office is pushing towards getting the kits kitted and hopefully shipped.

Also, the development group should be getting closure on the next release of software.

Cheers - Greg

According to L.J.Shepherd:

>  
> Thanks to all who responded to my inquiry regarding activity in this group.  
> Guess I just happened to comment at a slow period.....  
> 73, Jim K6OYY  
>  
>

---

## 19. Operations Manual

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 11 May 1995 15:28:43 -0500  
To: dsp-93@tapr.org  
Message-ID: <abd8230000021004848c@[204.96.0.79]>  
Rendered body type: text/plain

I have uploaded two files to ftp.tapr.org in directory

/tapr/dsp93/upload

The two files are a draft of a DSP-93 Operations Manual

OPSMAND.ZIP     A Microsoft Word 5 document

OPSMANT.ZIP     An ACSII version of the above

Please take a look at one of these and send me comments and corrections.

[Howard, Sorry I left your by-line off the title. I will correct]

Ron W5RKN

also:  
w5rkn@amsat.org

## 20. Re: [DSP-93:664] Operations Manual

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 11 May 1995 17:25:12 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199505112225.RAA22782@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Ron - we will need final input for printing by May 18th or so.  
So - everyone please give your input to Ron ASAP.

Greg

According to Ronald G. Parsons:

>  
> I have uploaded two files to ftp.tapr.org in directory  
>  
> /tapr/dsp93/upload  
>  
> The two files are a draft of a DSP-93 Operations Manual  
>  
> OPSMAND.ZIP      A Microsoft Word 5 document  
>  
> OPSMANT.ZIP      An ACSII version of the above  
>  
> Please take a look at one of these and send me comments and corrections.  
>  
> [Howard, Sorry I left your by-line off the title. I will correct]  
>  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

---

## 21. Re: [DSP-93:661] SIG still active

From: Carol Byers <crlbyers@garlic.com>  
Date: Thu, 11 May 1995 16:39:58 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950511163903.25115C-100000@garlic.com>  
Rendered body type: text/plain

Hi Jim,

Yes, things were slow...but now they are more/less active...

Carol, W9HGI

---

## 22. DSP/YAESU Interface

From: dmedley@dconcepts.com  
Date: Thu, 11 May 95 16:31:49 EST  
To: DSP-93@tapr.org  
Message-ID: <9505111631.D4100kS@dconcepts.com>  
Rendered body type: text/plain

Some time ago I asked if anybody had interfaced the DSP-93 with a Yaesu 736 radio. At that time there were no responses. However I seem to seen some interchange on this subject but unfortunately I was otherwise employed trying to troubleshoot my DSP which had suffered somewhat on a prolonged journey to Australasia. This finally seems to be fixed and I now want to proceed. I thinkl there are some tricks in this interface and to save me going through all the pain etc trying to reinvent the wheel would somebody give me a few clues please?  
Dave KI6QE

---

## 23. Re: [DSP-93:667] DSP/YAESU Interface

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 11 May 1995 19:59:02 -0500  
To: dsp-93@tapr.org  
Message-ID: <abd862c2000210047f78@[204.96.0.72]>  
Rendered body type: text/plain

>Some time ago I asked if anybody had interfaced the DSP-93 with a Yaesu  
>736 radio. At that time there were no responses. However I seem to seen  
>some interchange on this subject but unfortunately I was otherwise  
>employed trying to troubleshoot my DSP which had suffered somewhat on a  
>prolonged journey to Australasia. This finally seems to be fixed and I



>now want to proceed. I thinkl there are some tricks in this interface  
>and to save me going through all the pain etc trying to reinvent the  
>wheel would somebody give me a few clues please?  
>Dave KI6QE

Your timing is perfect. See [DSP-93:664] reproduced below.

I have uploaded two files to ftp.tapr.org in directory

/tapr/dsp93/upload

The two files are a draft of a DSP-93 Operations Manual

OPSMAND.ZIP      A Microsoft Word 5 document

OPSMANT.ZIP      An ACSII version of the above

Please take a look at one of these and send me comments and corrections.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 24. Disregard my plea

From: dmedley@dconcepts.com  
Date: Fri, 12 May 95 08:09:09 EST  
To: dsp-93@tapr.org  
Message-ID: <9505120809.D1661vH@dconcepts.com>  
Rendered body type: text/plain

I have just downloaded and printed out the Draft Operations Manual. This contains all the information I need so please disregard my last message for help. This manual is a MUST for all and appears to be a great job. I intend to spend tomorrow studying it and experimenting with my unit.  
73 de Dave

---

## 25. DSP-93 Operations Manual

From: kc5ejk@onramp.net (Robert Winingham)  
Date: Fri, 12 May 1995 16:49:48 -0500  
To: dsp-93@tapr.org  
Cc: w5rkn@amsat.org  
Message-ID: <v01510100abd986002133@[199.1.11.130]>  
Rendered body type: text/plain

>OPSMAND.ZIP      A Microsoft Word 5 document  
Ron was that really a MS word DOC . i opened both with BBEDIT and was able to read them.

-----  
DSP-93 Operations Manual:

Great job,

Could we add some of the comments from the build notes about interface from the DSP-93 to the computer. Several of us had to wire one of the RS-232 pins high to get the dsp-93 to send data to the computer.  
-- it is not handshaking but it does enable I/O  
-----

Bob KC5EJK Dallas -- kc5ejk@onramp.net

---

## 26. I join the club!!

From: dmedley@dconcepts.com  
Date: Fri, 12 May 95 14:19:10 EST  
To: DSP-93@tapr.org  
Message-ID: <9505121419.D7952eV@dconcepts.com>  
Rendered body type: text/plain

People allow me to join the club of those having heat (apparently) related problems and resets. I have been much delayed in my progress due to damage caused to my unit during my south Pacific venture but it is

(was) fixed yesterday to the extent that it passed all the Tests in the manual. So this morning I did the 10k resistor mod to the TNC disconnect and started doing some more testing. All went well for a while until I started playing with the Instrument programs. The Function Generator ran well but when I tried the oscilloscope there was no vertical signal. As I was investigating this phenomenon the unit reset and now refuses to load anything, even the LED test routine. It just loads and resets. One thing I did notice was that U208 was extremely hot, so hot in fact that it was impossible to hold a finger on it for more than an instant. The DC voltage on the analog board reads 5.02v and has not changed. The voltage on the digital board reads 4.99v and also does not seem to vary. Look forward to hearing from anybody who has a fix for this.  
73 de Dave KI6QE

---

## 27. signoff

From: LDALTON@aol.com  
Date: Fri, 12 May 1995 18:56:41 -0400  
To: dsp-93@tapr.org  
Message-ID: <950512185638\_116778582@aol.com>  
Rendered body type: text/plain

DSP-93 SIGNOFF

---

## 28. Re: [DSP-93:671] I join the club!!

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 12 May 1995 18:09:04 -0500  
To: dsp-93@tapr.org  
Message-ID: <abd9945f000210044cbd@[204.181.160.81]>  
Rendered body type: text/plain

>People allow me to join the club of those having heat (apparently)  
>related problems and resets. I have been much delayed in my progress due  
>to damage caused to my unit during my south Pacific venture but it is  
>(was) fixed yesterday to the extent that it passed all the Tests in the  
>>manual. So this morning I did the 10k resistor mod to the TNC disconnect  
>and started doing some more testing. All went well for a while until I  
>started playing with the Instrument programs. The Function Generator ran  
>well but when I tried the oscilloscope there was no vertical signal. As  
>I was investigating this phenomenon the unit reset and now refuses to  
>load anything, even the LED test routine. It just loads and resets.  
>One thing I did notice was that U208 was extremely hot, so hot in fact  
>that it was impossible to hold a finger on it for more than an instant.  
>The DC voltage on the analog board reads 5.02v and has not changed. The  
>voltage on the digital board reads 4.99v and also does not seem to vary.  
>Look forward to hearing from anybody who has a fix for this.  
>73 de Dave KI6QE

My U208 is barely warm to the touch. Since this happened after the 10k addition to the DSP-93 TNC connector, I'd check VERY carefully around the area of this mod.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 29. Ops Manual and the TNC

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 12 May 1995 18:09:08 -0500  
To: dmedley@dconcepts.com  
Cc: dsp-93@tapr.org  
Message-ID: <abd997ff0102100426df@[204.181.160.81]>  
Rendered body type: text/plain

Dave,

>I actually downloaded and printed the OPS manual last night and was  
>delighted to have it. It answered all my questions except I am now going  
>to join the group with the reset heat problem!!  
>Here are a few comments on the manual as far as I have gone.  
>On page 3 in the center where it says "DSPLoad FSKP1.OBJ" This is not  
>correct as it will produce the error message "unable to find file  
>FSKP1.OBJ.OBJ. The line should read "DSPLoad FSKP1" of course.  
>On the same para the end of the first line should read I think "change  
>the address of...."

Thanks. Corrections made.

>The next is more of a question but might produce a substantial addition.  
>I have never properly understood the relationship between the DSP-93 and  
>the TNC-2. This may be a dumb question but to my old brain it is because  
>I don't completely understand what is going on. Both the DSP and the TNC  
>have RS-232 ports which must be connected to something. The first  
>assumption is that they are connected to Com1 and com2 of the PC.

I added the following paragraph at the beginning of the section entitled  
"How to connect the DSP-93 to a TNC."

When the DSP-93 is configured as a modem, it must be attached to a TNC to perform various functions as HDLC framing and unframing and sending data to and from the computer. Thus there must be an RS-232 connection between the computer and the TNC. In addition, there must be an RS-232 connection between the Serial Port of the DSP-93 and a computer to load software into the DSP-93. This latter connection need not be in place all the time. It can be disconnected after the modem software is loaded into the DSP-93. This it is possible to use the DSP-93/TNC combination using only one serial port on the computer. See Figure 1 for possible connection arrangements between the DSP-93, the TNC and your computer.

I'll upload "Figure 1" to ftp.tapr.org.

>This being the case then the whole mess must be run in a multi tasking  
>environment such as Windows or WISP? There does not appear to be any way  
>to run it under DOS although all the material provided suggests that  
>this is possible. Certainly you can run the test programs under DOS but  
>as soon as the TNC becomes involved then you have the above problem. If  
>you would like to explain the above to me I will undertake to draft an  
>amendment to this para to cover this point in such a way that Dummies  
>like me won't have to ask dumb questions!!

Note that the two serial ports are not used at the same time, thus DOS operation is certainly possible.

>On page 4 near the end "The TNC Modem Disconnect.....". This is very  
>unclear to me. All the MFJ 1270 type TNCs that I have come across have  
>traces connecting 3-4,5-6,9-10,11-12 and 13-14 (BUT NOT 6-10). When

My MFJ 1270B has a trace between 6 & 10 on the PCB.

>using the disconnect to install a 9600 baud modem, for example, the five  
>traces mentioned above have to be CUT. The 6-10 is new to me. Now does  
>the manual mean to say that if these traces have been cut then they must  
>be restored plus the 6-10 one? Or does it mean to say to be sure that  
>these traces HAVE been cut and if so to leave them alone?

Why do you say the traces have to be cut? The only trace I cut was 19-20 on the MFJ 1270B PCB.

>On page 7 "IMPORTANT NOTE". U113 should be U213.

Thanks, you have sharp eyes.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 30. Re: [DSP-93:671] I join the club!!

From: Roy Welch <rdw@crl.com>  
Date: Fri, 12 May 1995 16:53:52 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950512165302.15628A-100000@crl3.crl.com>  
Rendered body type: text/plain

Dave, U208 here has always run barely warm. Your chip may have gone south on you.  
73, Roy

On Fri, 12 May 1995 dmedley@dconcepts.com wrote:

>  
> People allow me to join the club of those having heat (apparently)  
> related problems and resets. I have been much delayed in my progress due  
> to damage caused to my unit during my south Pacific venture but it is  
> (was) fixed yesterday to the extent that it passed all the Tests in the

> manual. So this morning I did the 10k resistor mod to the TNC disconnect  
> and started doing some more testing. All went well for a while until I  
> started playing with the Instrument programs. The Function Generator ran  
> well but when I tried the oscilloscope there was no vertical signal. As  
> I was investigating this phenomenon the unit reset and now refuses to  
> load anything, even the LED test routine. It just loads and resets.  
> One thing I did notice was that U208 was extremely hot, so hot in fact  
> that it was impossible to hold a finger on it for more than an instant.  
> The DC voltage on the analog board reads 5.02v and has not changed. The  
> voltage on the digital board reads 4.99v and also does not seem to vary.  
> Look forward to hearing from anybody who has a fix for this.  
> 73 de Dave KI6QE  
>

---

### 31. Ops Manual Fig.1

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 12 May 1995 19:10:24 -0500  
To: dsp-93@tapr.org  
Message-ID: <abd9a83c02021004f772@[204.181.160.16]>  
Rendered body type: text/plain

I have uploaded a file to ftp.tapr.org in directory

/tapr/dsp93/upload

The file is the Figure 1 of the DSP-93 Operations Manual

OPSFIG1.GIF

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 32. Re: [DSP-93:670] DSP-93 Operations Manual

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 12 May 1995 21:35:59 -0500  
To: dsp-93@tapr.org  
Message-ID: <abd9cb0f000210042654@[204.181.160.16]>  
Rendered body type: text/plain

Bob,

>DSP-93 Operations Manual:

>

>Great job,

Thanks to all that contributed.

>Could we add some of the comments from the build notes about interface  
>from the DSP-93 to the computer. Several of us had to wire one of the  
>RS-232 pins high to get the dsp-93 to send data to the computer.  
>-- it is not handshaking but it does enable I/O

Done. Thanks.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 33. manual

From: kc5ejk@onramp.net (Robert Winingham)  
Date: Fri, 12 May 1995 23:27:55 -0500  
To: dsp-93@tapr.org  
Cc: w5rkn@amsat.org  
Message-ID: <v01510100abd9d36e521a@[199.1.11.116]>  
Rendered body type: text/plain

Here is some of the reply you send me about Computer to DSP-93 I/O

They helped me and could be added to the operations manual.

-----

>the DSP-93 needs RTS to be high to send information to the terminal.

(Your Reply)

- Don't confuse two things:
1. Terminal (or computer) supplying and asserting RTS, and
  2. Hardware handshaking

It is true the the DSP-93 monitor requires RTS to be asserted in order to send data to the terminal, but other than that, no hardware handshake in the sense of data flow control is in place. Software handshake (X-on/X-off) is not implemented either.

Experience has shown that the DSP-93 can accept data at 19.2 kbps without problem but not all terminals (or terminal emulators in your computer) can accept a continuous flow of data at that rate.

-----

How about uploading more GIF files of pictures of the DSP unit. I would have liked to have seen this when assembling the unit.  
Also copies of the GIF figs. in the manual would help.

-----

Bob KC5EJK Dallas

---

### 34. Re: Super

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 13 May 1995 10:40:26 -0500  
To: dmedley@concepts.com  
Cc: dsp-93@tapr.org  
Message-ID: <abda7b2100021004841c@[204.181.160.85]>  
Rendered body type: text/plain

Dave,

It's best to have these interchanges on the dsp-93 mailing list so that others can benefit from the interchange and so others may be able to help.

>Now my remaining problem is with the Disconnect Header Traces.  
>To make it clearer my MFJ1274 has traces 3-4,5-6,9-10,11-12 and 13-14  
>cut. It was used with a 4800 baud modem which plugs into the disconnect.  
>Now on removing the modem, jumpers have to be installed on all the above  
>to make the unit play as a regular TNC-2. Now do I have to reverse this  
>procedure and solder jumpers underneath the TNC board or should I leave  
>it as it is? I suppose I am confused because they had to be cut for the  
>4800 baud modem to operate and I know the same thing is true for the  
>9600 baud modem so I infer the same for anything connected to the  
>disconnect. Apparently wrong but you will let me know I am sure.  
>I will continue reading the document over the week end and let you know  
>of anything else I find.

I can't comment on the requirements of the 4800 bps modem. But you need to have the connections on the modem disconnect header of your TNC as shown on the bottom of page 32 of the build document, either on the TNC PCB or on the connector which plugs onto the modem disconnect header of your TNC. Perhaps this is the way the 4800 modem functioned. In my TNC manual (MFJ 1270B), it says  
"Pin 10. This pin is physically tied to pin 6 ..."  
Recheck your manual and PCB.

>One last thing, Bob Strickland has suggested I might start experimenting  
>with the PSK which apparently has not been done much as yet. I did a lot  
>of work supporting the TAPR PSK unit in the past and this seems a useful  
>thing to do. My question is who wrote the PSK software? I believe it  
>needs some mods before it will work with the 736. It is 20 years since I  
>did any assembly language programming and that was with the original  
>AppleII !!!

The PSK modems have been tested with Kenwood and Icom transceivers. They will need a few small mods to use them with Yaesu transmitters. I have modified TESTPORT.ASM to work with Yaesu rigs (TESTPORY.ASM) If you wish to play with the PSK software, look at my TESTPORT mods.

See [DSP-93:611] TESTPORY (TESTPORT for Yaesu) 4/23/95

If you need more help, ask.

Ron W5RKN

also:

---

### 35. Re: [DSP-93:679] Re: Super

From: fperkins@onramp.net  
Date: Sat, 13 May 1995 14:17:02 -0500  
To: dsp-93@tapr.org  
Message-ID: <199505131917.0AA29340@ns.onramp.net>  
Rendered body type: text/plain

Hi Gang,

The above message reminds me ... has anyone besides me tried out the new version of the PSK modem with the "true DCD" implementation and the improved filters? I am getting 5% - 10% more data/pass from A0-16 with the new modem. Also, manual tuning for lock is easier to do as automatic tuning is not enabled until carrier lock (aka "true DCD") occurs.

73 Frank WB5IPM

---

### 36. Re: [DSP-93:667] DSP/YAESU Interface

From: geofft@suburbia.apana.org.au (Geoff Taurins)  
Date: Mon, 15 May 1995 09:52:19 +1000  
To: dsp-93@tapr.org  
Message-ID: <199505142352.JAA04710@suburbia.apana.org.au>  
Rendered body type: text/plain

>  
>Some time ago I asked if anybody had interfaced the DSP-93 with a Yaesu  
>736 radio. At that time there were no responses. However I seem to seen  
>some interchange on this subject but unfortunately I was otherwise  
>employed trying to troubleshoot my DSP which had suffered somewhat on a  
>prolonged journey to Australasia. This finally seems to be fixed and I  
>now want to proceed. I thinkl there are some tricks in this interface  
>and to save me going through all the pain etc trying to reinvent the  
>wheel would somebody give me a few clues please?  
>Dave KI6QE  
>  
G'day Dave name here is Geoff VK3JDG. I have my dsp93 and my FT736 connected together without any headaches. All is running well, if you have any questions I would be happy to answer them ( if I can ). I can be found here on the dsp93 mail list or on K023 and K025 ( internet is vk3jdg@amsat.org )

73 Geoff VK3JDG

---

### 37. [DSP-93:676] Ops Manual Fig.1 -Reply

From: PAUL SHUCH <PSHUCH@pct.edu>  
Date: Mon, 15 May 1995 09:50:26 -0400  
To: dsp-93@tapr.org  
Message-ID: <sfb72459.002@pct.edu>  
Rendered body type: text/plain

Thanks, Ron, for the ops manual figure 1 GIF. It printed beautifully on A size under WINGIF. This is certainly a uestful way to transfer diagrams, for those of us who don't have a Postscript printer, and can't figure out how to make GhostScript run on our systems! I'm not opposed to distributing postscript files, but strongly urge the powers that be to make ALL diagrams available as GIFs. And the ftp server runs well -- it's a great way to distribute manuals, etc.

Thanks again for your efforts. 73, Paul n6tx

"When your only tool is a screwdriver, every problem looks like a can of paint."

---

### 38. Mac Un-zipper

From: "Paul Beckmann" <paul@eye.psych.umn.edu>  
Date: Mon, 15 May 95 09:23:58 CDT  
To: dsp-93@tapr.org  
Message-ID: <9505151423.AA05788@eye.psych.umn.edu>  
Rendered body type: text/plain

Can anyone post a shareware/freeware unzipper for the Mac on the TAPR site? Although I run a 486 in the shack, my internet and word-processing machines are Macs. Thanks.  
--Paul  
wa0rse@amsat.org

---

### 39. Re: [DSP-93:683] Mac Un-zipper

From: kc5ejk@onramp.net (Robert Winingham)  
Date: Mon, 15 May 1995 13:35:32 -0500  
To: dsp-93@tapr.org  
Cc: paul@eye.psych.umn.edu  
Message-ID: <v01510100abdd4eedd0a5@[199.1.11.134]>  
Rendered body type: text/plain

>Can anyone post a shareware/freeware unzipper for the Mac on the TAPR  
>site? Although I run a 486 in the shack, my internet and word-processing  
>machines are Macs. Thanks.  
>--Paul  
> wa0rse@@amsat.org

Good old "StuffIt Expander" will work great and it is available  
most local Mac BBS system and INF0-MAC

Bob KC5EJK Dallas

---

## 40. Re: [DSP-93:683] Mac Un-zipper

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 15 May 1995 14:23:24 -0500  
To: dsp-93@tapr.org  
Message-ID: <abdd5948000210040158@[204.96.0.68]>  
Rendered body type: text/plain

>Can anyone post a shareware/freeware unzipper for the Mac on the TAPR  
>site? Although I run a 486 in the shack, my internet and word-processing  
>machines are Macs. Thanks.  
>--Paul  
> wa0rse@@amsat.org

>From the DSP-93 README file.

Unarchiving instructions for DSP-93 files using a Macintosh.

If you are unable to read DOS formatted disks, contact the TAPR office and  
request that Macintosh formatted disks be sent.

Copy the .ZIP files on the diskettes to a folder on your hard disk. Expand  
the .ZIP files. StuffitExpander (freeware) and DropStuff (shareware) are  
recommended. See below for a source for these programs if you do not have  
them already.

If you are using StuffitExpander, simply drag the .ZIP files onto the  
StuffitExpander icon. The archives will be expanded and placed into a  
folder. If there are unexpanded archives inside the expanded folders,  
repeat this procedure. StuffitExpander will convert the DOS format text  
files to Macintosh files in either SimpleText or Word format.

StuffitExpander and DropStuff may be obtained via anonymous ftp from  
mac.archive.umich.edu or one of its mirrors.

/mac/util/compression/stuffitexpander3.52.sea.hqx  
187 11/23/94 BinHex4.0,SelfExtractingArchive

Expand archive compressed by StuffIt, Compact Pro, and BinHex  
documents. Several additional features added when used with  
DropStuff, available elsewhere at mac.archive.

/mac/util/compression/dropstuff3.52.sea.hqx  
BinHex4.0,SelfExtractingArchives

Compress files in StuffIt format. When used with StuffIt Expander  
3.5 (available elsewhere at mac.archive), also allows expansion of  
.zip, .arc, .gz (GnuZip), .Z (Unix Compress), .uu (Uuencode),  
.pkg (AppleLink), .QWK, and .tgz archives. Accelerated for PowerPC  
Macs, too.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 41. IP address of ftp.tapr.org

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 15 May 1995 14:23:29 -0500  
To: dsp-93@tapr.org  
Message-ID: <abdd59ad010210041974@[204.96.0.68]>  
Rendered body type: text/plain  
Can someone help Paul?

>Date: Mon, 15 May 95 08:58:04 CDT  
>From: "Paul Beckmann" <paul@eye.psych.umn.edu>  
>To: w5rkn@amsat.org  
>Subject: ops guide  
>Status:  
>  
>  
>Hi, Ron.  
>  
> Having problems with the lookup here of the IP address of  
>ftp.tapr.org. Can you help me with it? I want to peek at your  
>ops guide.  
>--Paul  
> wa0rse@amsat.org  
>

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 42. Re: [DSP-93:686] IP address of ftp.tapr.org

From: Doug Rorem <rorem@mana.eecs.uic.edu>  
Date: Mon, 15 May 1995 15:01:10 -0500  
To: dsp-93@tapr.org  
Message-ID: <199505152001.PAA01545@mana.eecs.uic.edu>  
Rendered body type: text/plain

Paul

ftp.tapr.org resolves to:

dingus.n5lyt.datarace.com [204.96.214.85]

Hope that helps.

Doug

---

## 43. RE: [DSP-93:686] IP address of ftp.tapr.org

From: "Beaudry, Tom" <BEAUDRTM@dun.nielsen.com>  
Date: Tue, 16 May 95 08:16:00 PDT  
To: dsp-93 <dsp-93@tapr.org>  
Message-ID: <2FB8C229@mailgate.dun.nielsen.com>  
Rendered body type: text/plain

If it's any help, the hard IP address as reported by ping at this sight is:

204.96.214.85

-----

From: dsp-93  
To: dsp-93  
Subject: [DSP-93:686] IP address of ftp.tapr.org  
Date: Monday, May 15, 1995 2:37PM

Can someone help Paul?

>Date: Mon, 15 May 95 08:58:04 CDT  
>From: "Paul Beckmann" <paul@eye.psych.umn.edu>  
>To: w5rkn@amsat.org  
>Subject: ops guide  
>Status:  
>  
>  
>Hi, Ron.  
>  
> Having problems with the lookup here of the IP address of  
>ftp.tapr.org. Can you help me with it? I want to peek at your



```
>ops guide.
>--Paul
> wa0rse@amsat.org
>
```

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 44. HF RTTY

From: dmedley@dconcepts.com  
Date: Wed, 17 May 95 08:01:12 EST  
To: dsp-93@tapr.org  
Message-ID: <9505170801.D0100bc@dconcepts.com>  
Rendered body type: text/plain

Has anyone done any work on RTTY/PACTOR/AMTOR modems for the DSP-93.  
I would be interested in hearing from anyone who has.  
73 de Dave

---

## 45. At last

From: dmedley@dconcepts.com  
Date: Wed, 17 May 95 08:00:52 EST  
To: dsp-93@tapr.org  
Message-ID: <9505170800.D79861q@dconcepts.com>  
Rendered body type: text/plain

Well I finally got my DSP-93 repaired and operating again, at least on 1200 baud packet. I sure learned a lot about the machine in the process. The interface with the FT-736 is very simple so long as you don't need the freq "UP-Down" function. I am going to use my TRAKBOX to fulfil this function.

I had a small problem with the PTT but it turned out to be a faulty connection in the TNC header plug. These things are not fun to construct.

Tomorrow I will experiment with the AO-13 telemetry and report on my success (if any).  
Dave

---

## 46. Manual comments

From: dmedley@dconcepts.com  
Date: Wed, 17 May 95 08:00:50 EST  
To: dsp-93@tapr.org  
Message-ID: <9505170800.D7775tA@dconcepts.com>  
Rendered body type: text/plain

Here are my comments on the manual. I printed out the Microsoft Word file using MSWord 6.0 so my page references are from that. I have also included more reference data to help find the plac.

- Page 1. Para Heading "Loading the DSP-93 Software"  
Second line in part should read "The README.NOW file"
- Page 3. Para Heading "Loading Files from DOS"  
Should read in part " DSP\_LOAD.CFG file and change the address of the computer COM port....."  
Same para. DSPLOAD FSKP1.OBJ should read DSPLOAD FSKP1  
Para Heading "Loading files using the Windows program WiSP"  
Sub para 1. line 3 "i.e where....."
- Page 4. Para "How to connect the DSP-93 to a TNC"  
Ron has already added a diagram which helps a lot to understand this section. I also suggest the diagram on page 32 of the be included for completeness.  
I am also suggesting some words like this be added:  
"You need to be careful with this jumpering. For example a recent MFJ1274 came with traces already on the PCB for most of the jumpers called out here. It is recommended that you modem carefully to see just what jumpers are required. In the past it has also been necessary to cut some traces for other applications so it is possible one or two of these may have to be restored"
- Page 4-5 Para "Radio IO Port Configuration Setup."  
Second para 4th line "These are simple issues....."  
Eighth para "The jumpers to configure the two radio control ports....."
- Page 7. Para "IMPORTANT NOTE". Third line U113 should be U213.
- Page 7-8 Para "How to connect the DSP-93 to Radios which have PTT....."  
Sub para 2. first line delete "some radios which have"

Page 11. Para "FSKISIP1.OBJ-Radio Port 1, gain16....."  
Sub para 3 line 4 delete "the" before "some stations".  
Just after For FSKP1.OBJ and FSKISIP1.OBJ  
I think the sentence should read  
"The byte that needs changing is....."  
Same comment on the next page just before the Gain Value  
table.  
Page 13. Para starting " The TX output audio level is....."  
Third line should be "about as loud as..."  
Page 14. Para beginning "Stick the shield...." This doesn't sound right  
can't think of a better word.

Thats all for now but I would suggest the document be made as complete  
as possible without cross references to, for example, the Assembly  
Manual.  
Hope this helps Ron.  
Dave

---

## 47. DSP-93 kit shipments

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Wed, 17 May 95 17:50:41 BST  
To: dsp-93@tapr.org  
Message-ID: <9505171650.AA22963@getafix.oasis.icl.co.uk>  
Rendered body type: text/plain

HI, can anyone tell me the state of the DSP-93 kit shipments  
that are due about now. I want to join in the fun :).

Thanks, John Melton g0orx/n6lyt

g0orx@amsat.org

---

## 48. Re: [DSP-93:689] HF RTTY

From: Mills@huey.udel.edu  
Date: Wed, 17 May 95 14:39:17 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9505171439.aa13074@huey.udel.edu>  
Rendered body type: text/plain

dmedley,

Se the stuff in the pub/ntp/modem.zip directory on louie.udel.edu.  
It is a work in progress, but lavishly ornamented code. The RTTY  
modem is slightly awesome; the AMTOR code is primitive. One problem I  
have is access to CCIR Report 625, for which I apparently have to buy  
a whole volume CCIR Volume 8, which costs 484 bucks! Reverse engineering  
my humble PK232 revealed lots of secrets, more remain.

Dave

---

## 49. Re: [DSP-93:691] Manual comments

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 17 May 1995 14:00:50 -0500  
To: dsp-93@tapr.org  
Message-ID: <abddf7ad00021004ea6a@[204.96.0.138]>  
Rendered body type: text/plain

>Here are my comments on the manual. I printed out the Microsoft Word  
>file using MSWord 6.0 so my page references are from that. I have als  
>included more reference data to help find the plac.

Thanks for the additional info. I received some comments on paper from Bob  
and it appears that Word 6 (Windows, I presume) uses a font for Times 12  
which is larger and has more leading than the Macintosh - thus the  
different pagination.

Thanks.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 50. RE: [DSP-93:694] Re: Manual comments

From: "Beaudry, Tom" <BEAUDRTM@dun.nielsen.com>  
Date: Wed, 17 May 95 16:00:00 PDT

To: dsp-93 <dsp-93@tapr.org>  
Message-ID: <2FBA80F8@mailgate.dun.nielsen.com>  
Rendered body type: text/plain

You might try using Times New Roman 12. It's a TrueType font. Since Apple developed the font jointly with Microsoft, it should come out same on the two systems.

-----

From: dsp-93  
To: dsp-93  
Subject: [DSP-93:694] Re: Manual comments  
Date: Wednesday, May 17, 1995 2:19PM

>Here are my comments on the manual. I printed out the Microsoft Word  
>file using MSWord 6.0 so my page references are from that. I have als  
>included more reference data to help find the plac.

Thanks for the additional info. I received some comments on paper from Bob and it appears that Word 6 (Windows, I presume) uses a font for Times 12 which is larger and has more leading than the Macintosh - thus the different pagination.

Thanks.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 51. Re: [DSP-93:692] DSP-93 kit shipments

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 17 May 1995 15:23:46 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199505172023.PAA07843@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

We are working to get the last few parts in and our kitterin the Tucson is kitting currently.

We hope to be able to start shipping around the 25-30th.

I have to take some of the blame in the delay this time, since I had my PhD exams and let a few of the high-priority items drop.

Cheers - Greg, WD5IVD

According to j.d.melton.slh0613@oasis.icl.co.uk:

>  
> HI, can anyone tell me the state of the DSP-93 kit shipments  
> that are due about now. I want to join in the fun :).  
>  
> Thanks, John Melton g0orx/n6lyt  
>  
> g0orx@amsat.org  
>

---

## 52. Request

From: dmedley@dconcepts.com  
Date: Wed, 17 May 95 14:32:11 EST  
To: dsp-93@tapr.org  
Message-ID: <9505171432.D3232hR@dconcepts.com>  
Rendered body type: text/plain

Well Hello there Mr Clem. It was really good to hear from you and I hope all is well at your house. Are you still in the gateway business?  
On the 736R I ended up wiring the header at the TNC end exactly as on page 32 of the manual except I omitted 11-12 and 13-14 jumpers as they were already traces on the TNC PCB. My TNC is an MFJ1274. I suggest you check carefully underneath your TNC and see what races are/are not there. Some have a trace 17-18 or 19-20. If either of these exist you need to cut them. I think you may find that the traces 5-6 and 6-10 are also already on the PCB. Anyway you need to end up exactly as per the diagram.

One tricky thing I did find was that if you do not follow the correct startup routine the PTT won't work. What I do is to start the TNC up first and then the DSP. This works every time. Actually I am using two laptop computers as I got sick of changing plugs all the time when I needed to restart the system.

So far I have the standard packet modem running just fine but had no luck either with AO-13 or PACSAT this morning.  
Incidentally you do not need any jumpers on the third header on the cable which connects to the TNC header in the DSP box.  
Lets know how you get on Clem.  
73 de Dave

---

## 53. PSK modems

From: dmedley@dconcepts.com  
Date: Wed, 17 May 95 14:50:55 EST  
To: dsp-93@tapr.org  
Message-ID: <9505171450.D2021NC@dconcepts.com>  
Rendered body type: text/plain

I have been experimenting with the PSK modems on AO-13(Telemetry) and AO-16. So far no luck so I have some questions really directed at WB5IPM but would be happy to hear from anyone else who has tried them.  
My DSP appears to be OK in that the three Instrument packages run OK as does the Packet Modem which behaves really well.  
The TNC I am using is MFJ1274 and an FT736 radio.  
In the case of the AO-13 telemetry the sigs were lousy this morning and there was a birdie from the DSP right on the beacon freq. (Yes I do have the cover on the DSP). Anyway I had to give that up so I tried a couple of the PSK 93 modems on AO-16 which was as strong as usual. As the up-down pulses will not actuate the 736 (736 needs high pulses rather than low) I tuned manually with an assist from the trakbox. I managed to tune the signal so that LED212 winked steadily but that is all that happened. All the lights on the TNC remained dark. I was using Procomm Plus as the terminal program and I would have expected to see something on the screen but nothing, not even garbage. I suppose this was not surprising as the TNC was not receiving any data. When operating packet, all the TNC LEDS act quite normally so I assume this tells me that the TNC disconnect hook up is correct.  
I notice that none of the PSK modems address the 736 but it seems to me that this is only relevant to the freq control which I am doing manually.  
To operate correctly with AO-16 I assume I need to use the PB/PG software with the TNC in KISS mode. Incidentally does anyone out there remember how you get the MFJ out of KISS other than by removing the battery jumper and waiting for a longer time than is convenient!  
73 de Dave

---

## 54. List activity ??

From: tsmithers@cix.compulink.co.uk (T W Smithers)  
Date: Thu, 18 May 95 00:10 BST-1  
To: dsp-93@tapr.org  
Message-ID: <memo.371402@cix.compulink.co.uk>  
Rendered body type: text/plain

Whats the list activity like at the moment...I hav'nt received anything about the dsp-93 project for at least a month even though the listserv says I'm still subscribed.  
Is everyone else receiving mail ???

Trevor G0KTN

---

## 55. Re: [DSP-93:698] PSK modems

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 17 May 1995 18:25:09 -0500  
To: dsp-93@tapr.org  
Message-ID: <abe034840002100435e9@[204.181.160.29]>  
Rendered body type: text/plain

Dave,

>To operate correctly with AO-16 I assume I need to use the PB/PG  
>software with the TNC in KISS mode. Incidentally does anyone out there  
>remember how you get the MFJ out of KISS other than by removing the  
>battery jumper and waiting for a longer time than is convenient!  
>73 de Dave

Create a three byte file with the three bytes having the values (decimal)  
192 255 192 or (hex) C0 FF C0

There are several ways to do this (use debug, a friendly DOS editor holding down the alt key and typing on the keypad 1 9 2, etc.)

Don't think that works in Windows.

Then name the file UNKISS.TXT (or something) and use a terminal program to send the file to the TNC.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 56. Re: [DSP-93:698] PSK modems

From: Roy Welch <rdw@crl.com>  
Date: Wed, 17 May 1995 18:07:58 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950517180445.23310B-100000@crl10.crl.com>  
Rendered body type: text/plain

Dave from the numeric keypad, not the number keys at the top of the keypad, enter ALT 192 ALT 255 ALT 192 to exit from KISS.

73, Roy

---

## 57. list rules

From: vince@ns2.rfsi.com (Vince Risalvato )  
Date: Wed, 17 May 1995 23:54:13 -0500  
To: dsp-93@tapr.org  
Message-ID: <199505180043.AAA01596@ns2.rfsi.com>  
Rendered body type: text/plain

Would there be any objections to posting a "for sale" for a DSP-93 that I must reluctantly sell?

Vince KD7AI

---

## 58. Re: [DSP-93:702] list rules

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 18 May 1995 01:47:30 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199505180647.BAA01143@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

I think you already did :-)

Is fine.

Greg

According to Vince Risalvato:

>  
> Would there be any objections to posting a "for sale" for a DSP-93  
> that I must reluctantly sell?  
>  
> Vince KD7AI  
>  
>

---

## 59. MFJ1274 upgrades?

From: "Lawrence F. Johnston" <ljohnsto@carbon.cudenver.edu>  
Date: Thu, 18 May 1995 09:08:51 -0600 (MDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.OSF.3.91.950518090654.26196A-100000@carbon.cudenver.edu>  
Rendered body type: text/plain

I have an MFJ1274, SN 02012354, with firmware release 1.2.6.

Are there any mods or upgrades I should make to get maximum performance with the DSP-93?

Larry, W0EIE

---

## 60. Re: PSK modems

From: dmedley@dconcepts.com  
Date: Fri, 19 May 95 08:48:20 EST  
To: dsp-93@tapr.org  
Message-ID: <9505190848.D2848bg@dconcepts.com>  
Rendered body type: text/plain

Thanks Frank. I did get a few frames from LUSAT this morning which is encouraging but as you suspected the TRAKBOX tuning is not going to do the job. So tomorrow I am going to explore some hardware solutions to the problem as we discussed on the phone. A0-13 was inaudible this morning. I hope something bad has not happened to it but I seem to remember that it is about now they are going to change its attitude and I think the beacon is off during these periods.

Now some more questions. Can you suggest a good book for me to study on the assembly language? I would like to try and learn a little about it. I did do some assembler programming years ago on a little Rockwell machine called an AIM-65. This was before the PET and the Apple II. The AIM-65 had 4K of RAM and an audio tape storage and a 20 character printer like they had in the grocery stores. It had a 4k basic interpreter and an assembler on audio tape!!! Anyway we wrote a DOS good enough to run a single 5 1/4 floppy and I well remember that the first floppy I bought cost \$10.00!!!

Next question is why do you run the TNC connection with the computer at 1200 baud? When I used to run the SATGATE in California we always had better results running the interface at 4800 for PACSAT/LUSAT and 19200 for UO22/K023.

I am now using the PB/PG software and have sent off for WiSP. Am going to concentrate on the slow speed birds for the time being before I tackle 9600 baud.

I have copied this to the DSP-93 server in case others out there may be interested in these experiments.

Am having a miserable time with bronchitis which has reduced my ambition some!!

73 de Dave

---

## 61. Re: [DSP-93:705] Re: PSK modems

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 19 May 1995 13:18:42 -0500  
To: dsp-93@tapr.org  
Message-ID: <abe2910400021004bd76@[204.181.160.91]>  
Rendered body type: text/plain

Dave,

>Thanks Frank. I did get a few frames from LUSAT this morning which is  
>encouraging but as you suspected the TRAKBOX tuning is not going to do  
>the job. So tomorrow I am going to explore some hardware solutions to  
>the problem as we discussed on the phone.

I you get a version of the PSK modems working for the FT-736, be sure to post the source code and object to ftp.tapr.org.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 62. Re: [DSP-93:705] Re: PSK modems

From: fperkins@onramp.net  
Date: Sat, 20 May 1995 15:54:37 -0500  
To: dsp-93@tapr.org  
Message-ID: <199505202054.PAA07411@ns.onramp.net>  
Rendered body type: text/plain

Hi Dave,

I run my TNC-to-computer link at 19.2 for all modems that use the TNC, including the PSK modem for the MicroSats. In the case of the PSK modem for A0-13, the DSP-to-computer link runs at 1200, which is needed by the most popular A0-13 telemetry program, call P3C.EXE. A0-13 sends PSK telemetry at 400 bps, so a 1200 bps link keeps up very efficiently.

Digital Signal Processing with the TMS320C25, published by WILEY, is a pretty good book on DSP assembly language programming.

73 Frank WB5IPM

---

## 63. New Address

From: dmedley@dconcepts.com  
Date: Sun, 21 May 95 09:48:46 EST  
To: DSP-93@tapr.org  
Message-ID: <9505210948.D9827zJ@dconcepts.com>  
Rendered body type: text/plain

Please note my new INTERNET address is  
dmedley@indirect.com  
The present address will also work for a few more weeks.  
73 de Dave

---

## 64. LUSAT/FT736/DSP93

From: dmedley@dconcepts.com  
Date: Sun, 21 May 95 09:48:37 EST  
To: dsp-93@tapr.org  
Message-ID: <9505210948.D8982iu@dconcepts.com>  
Rendered body type: text/plain

Here are some notes of my experiments over the last two days with LUSAT. My radio is the FT736 and the TNC an MFJ1274. My first problem was with the TNC which refused to work on regular packet unless squelched. Then it refused all attempts to get it out of KISS mode except by removing the battery jumper. Turned out to be a bad EPROM. Replacing it with a TAPR 1.1.7 cleared all the above problems up nicely. Then how to work the up/down function of the 736. The first solution which appealed to me was to use a couple of small reed relays. Hooked them up and the testport program ran just great (for about a minute) and then frequency read out on 736 ran away!! Too bad the hex inverter (U205) was not designed to drive relays. Now I need a new U205. Phooey. Then I tried just using the trakbox for both freq and antenna tracking. Much to my surprise it showed promise in that I received most of the downlink data (using PB) and actually started it broadcasting directories. Using PG I managed to connect to the bird but was not successful in uploading a small file. The trakbox tuning is not quite good enough. So now I need to try and devise a better scheme for freq control. Perhaps (after replacing U205) it might work to drive some kind of Darlington array with the U205 and connect the relays to that. Or use an optocoupler but I have had no experience with these devices. I would really appreciate some help/advice from some of you hardware wizzes out there especially to do with the optocoupler solution. The basic problem is, of course, that the Yaesu needs the up/down lines to go high rather than low as for ICOM or Kenwood. Thanks in advance  
Dave

---

## 65. Re: FT736 and PSK modems

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sun, 21 May 1995 18:45:45 +0000  
To: dsp-93@tapr.org  
Message-ID: <9505211839.AA05337@camel.campbell.edu>  
Rendered body type: text/plain

Dave,

As Frank always says, "it's just SW [software]". I think that your FT736R can be made to work with a small change or two in the .asm file for the psk modem you are using. The source to the psk modems is included in the file distribution. My guess is that Frank or Ron could point you in the right direction and get you started in reversing the logic of the microphone button pushes in the code.

Any suggestions from you SW gurus?

On the other hand, I could be full of it and not know what I am talking about.....it HAS been known to happen before ;)

>

>Here are some notes of my experiments over the last two days with LUSAT.

>My radio is the FT736 and the TNC an MFJ1274. My first problem was with  
  
// Lots deleted  
  
>these devices. I would really appreciate some help/advice from some of  
>you  
>hardware wizzes out there especially to do with the optocoupler  
>solution.  
>The basic problem is, of course, that the Yaesu needs the up/down lines  
>to go high rather than low as for ICOM or Kenwood.  
>Thanks in advance  
>Dave  
>  
>

Mark L. Hammond [KC4EBR]

---

## 66. Re: [DSP-93:709] LUSAT/FT736/DSP93

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 21 May 1995 15:07:21 -0500  
To: dsp-93@tapr.org  
Message-ID: <abe54c74000210048b46@[204.181.160.9]>  
Rendered body type: text/plain

Dave,

>appealed to me was to use a couple of small reed relays.

What was the current requirements of the relays? The 74S should sink about 20 mA if I remember correctly. It should be easy to find small SPDT relays that are within that current. And SPDT will enable you to reverse the polarity by changing the wiring.

>The basic problem is, of course, that the Yaesu needs the up/down lines  
>to go high rather than low as for ICOM or Kenwood.

It's only software. Come on you guys -- get your programming feet wet.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 67. Re: [DSP-93:710] Re: FT736 and PSK modems

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 21 May 1995 15:07:25 -0500  
To: dsp-93@tapr.org  
Message-ID: <abe54d8501021004cb54@[204.181.160.9]>  
Rendered body type: text/plain

>Dave,

>

>As Frank always says, "it's just SW [software]". I think that your FT736R  
>can be made to work with a small change or two in the .asm file for the psk  
>modem you are using. The source to the psk modems is included in the file  
>distribution. My guess is that Frank or Ron could point you in the right  
>direction and get you started in reversing the logic of the microphone  
>button pushes in the code.

>

>Any suggestions from you SW gurus?

Just compare TESTPORT and TESTPORY posted here in [DSP-93:611]

>

>On the other hand, I could be full of it and not know what I am talking  
>about.....it HAS been known to happen before ;)

Not THIS time :-)

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 68. Relays



From: dmedley@indirect.com (David J. Medley)  
Date: Sun, 21 May 1995 14:09:14 -0700  
To: DSP-93@tapr.org  
Message-ID: <199505212109.OAA19846@bud.indirect.com>  
Rendered body type: text/plain

Ron the relays I used were 20ma 12 volt reed relays from radio shack. They are the smallest in the catalog. So they are right on the edge of the capacity of the 74ls05. I will try and see what I can find locally here tomorrow as this is a very simple solution. I will also order the programming book you suggested.  
Thanks de Dave

---

## 69. Re: [DSP-93:713] Relays

From: Roy Welch <rdw@crl.com>  
Date: Sun, 21 May 1995 14:58:55 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950521145733.28390A-100000@crl10.crl.com>  
Rendered body type: text/plain

I thought the 74LS05 had been changed to an 8022 for more current rating. Am I wrong?

73, Roy

On Sun, 21 May 1995, David J. Medley wrote:

> Ron the relays I used were 20ma 12 volt reed relays from radio shack. They  
> are the smallest in the catalog. So they are right on the edge of the  
> capacity of the 74ls05. I will try and see what I can find locally here  
> tomorrow as this  
> is a very simple solution. I will also order the programming book you suggested.  
> Thanks de Dave  
>  
>

---

## 70. Re: [DSP-93:713] Relays

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 21 May 1995 16:59:01 -0500  
To: dsp-93@tapr.org  
Message-ID: <abe566c001021004b8b5@[204.181.160.10]>  
Rendered body type: text/plain

>Ron the relays I used were 20ma 12 volt reed relays from radio shack. They  
>are the smallest in the catalog. So they are right on the edge of the  
>capacity of the 74ls05.

You should have a 74S05, not 74LS05. Also these are pulled up to +5V, not +12V.

>From the Operations Manual (to pull up to +12):

(a) replace U205 with a 7406 and  
(b) disconnect the common end of R217 from +5V and reconnect common end of R217 to +12V.

In production Rev. 2 (3/1/95) and later boards, a pad was added to make this change. It is marked "J" and is located near R217. You will need to cut the trace which is connected to the adjacent +5V pad 7 before connecting +12V.

Note. In earlier versions of the DSP-93 a jumper had to be added between the common end of R217 and +5V. (Refer to Build Update Notes.)

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 71. Re: [DSP-93:715] Re: Relays

From: fperkins@onramp.net  
Date: Sun, 21 May 1995 17:59:55 -0500  
To: dsp-93@tapr.org  
Message-ID: <199505212259.RAA13900@ns.onramp.net>  
Rendered body type: text/plain

Are diodes needed across the relay coils to suppress inductive voltage spikes?

## 72. Re: [DSP-93:716] Re: Relays

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 21 May 1995 18:25:29 -0500  
To: dsp-93@tapr.org  
Message-ID: <abe57b92000210049d47@[204.181.160.16]>  
Rendered body type: text/plain

>Are diodes needed across the relay coils to suppress inductive  
>voltage spikes?  
>  
>73 Frank WB5IPM

That is good "engineering practice" in any case.

>I thought the 74LS05 had been changed to an 8022 for more current  
>rating. Am I wrong?  
>  
>73, Roy

What's an 8022? Hadn't heard of that one.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 73. Re: [DSP-93:716] Re: Relays

From: dmedley@indirect.com (David J. Medley)  
Date: Sun, 21 May 1995 16:30:27 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505212330.QAA06367@bud.indirect.com>  
Rendered body type: text/plain

>Are diodes needed across the relay coils to suppress inductive  
>voltage spikes?  
>  
>73 Frank WB5IPM  
>  
>

I suspect it would be most desirable. I have ordered some 5v relays with  
10ma coils which already have the diodes installed. Will let you know how  
I get on when they arrive next week.  
Meanwhile I have mislaid the name of the Programming book you suggested. You  
might let me have that again and also the Library of Congress number if it  
has one. Meanwhile I have just got a PPP connect to the INTERNET yesterday  
and am still completely fascinated by whats out there. Lots to learn about that  
also.  
Dave KI6QE

---

## 74. Re: [DSP-93:717] Re: Relays

From: Roy Welch <rdw@crl.com>  
Date: Sun, 21 May 1995 18:03:22 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950521180153.28810A-100000@crl6.crl.com>  
Rendered body type: text/plain

On Sun, 21 May 1995, Ronald G. Parsons wrote:

> >I thought the 74LS05 had been changed to an 8022 for more current  
> >rating. Am I wrong?  
> >  
> >73, Roy  
> >  
> >What's an 8022? Hadn't heard of that one.

On second look it is a 7406. The number 8022 was also on the case more  
prominently, HI!

73, Roy

---

## 75. Re: [DSP-93:718] Re: Relays

From: fperkins@onramp.net  
Date: Sun, 21 May 1995 20:46:28 -0500  
To: dsp-93@tapr.org  
Message-ID: <199505220146.UAA22881@ns.onramp.net>  
Rendered body type: text/plain

It is "Digital Signal Processing with the TMS320C25, published by Wiley.  
The book is at work right now so I can't check on the LOC number.

---

## 76. Re: [DSP-93:719] Re: Relays

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 21 May 1995 22:16:32 -0500  
To: dsp-93@tapr.org  
Message-ID: <abe5b152000210043dde@[204.96.0.100]>  
Rendered body type: text/plain

>On Sun, 21 May 1995, Ronald G. Parsons wrote:  
>  
>> >I thought the 74LS05 had been changed to an 8022 for more current  
>> >rating. Am I wrong?  
>> >  
>> >73, Roy  
>>  
>> What's an 8022? Hadn't heard of that one.  
>  
>On second look it is a 7406. The number 8022 was also on the case more  
>prominently, HI!  
>  
>73, Roy

Ahh, the 1980 week 22 date code. It was much worse back in 1974 when the  
part number was 7405 and the date code was 7406, etc.

The 7406 will sink 16 mA.  
The 74S06 will sink 20 mA.  
The 74LS06 will sink 8 mA.

Pick one to fit your current needs.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 77. re: DSP book

From: Doug Rorem <rorem@cherokee.eecs.uic.edu>  
Date: Sun, 21 May 1995 22:34:09 -0500  
To: dsp-93@tapr.org  
Message-ID: <199505220334.WAA08052@cherokee.eecs.uic.edu>  
Rendered body type: text/plain

21-may-95

>Digital Signal Processing with the TMS320C25, published by WILEY, is a  
>pretty good book on DSP assembly language programming.  
>  
>73 Frank WB5IPM

FYI..

Digital signal processing with the TMS320C25  
Chassaing, Rulph

published 1990 by Wiley, New York 464 pg  
ISBN 0471510661

Doug Rorem  
rorem@uic.edu

---

## 78. Software Developments?

From: "Steve Davis" <STEVE@z12ucx.gen.nz>  
Date: Mon, 22 May 1995 18:32:13 +1200  
To: dsp-93@tapr.org  
Message-ID: <1F8BE5C0798@zeus.z12ucx.ampr.org>  
Rendered body type: text/plain

I am eagerly awaiting to receive my kit here downunder, and am interested to see what modem's etc are currently under development.

In particular I am interested in:

POCSAG decode ( maybe encode as well )

56/64K Data ala GRAPES style modem

Is anyone working on this sort of thing, or does anyone know of someone else working on projects along these lines.

Thanks in Advance  
73's  
Steve

>From ZL downunder - The home of the America's Cup

```

Steve Davis ZL2UCX | Internet: steve@zl2ucx.gen.nz
P O Box 120 | Packet: zl2ucx@zl3ac.#80.nzl.oc
Christchurch |
New Zealand | Fax: +64-3-343-0461

```

---

## 79. 400 BPSK?

From: endeavor@usa1.com (John Morley)  
Date: Mon, 22 May 1995 07:11:29 -0400  
To: dsp-93@tapr.org  
Message-ID: <199505221114.HAA11282@spider.netmetro.com>  
Rendered body type: text/plain

I recently purchased the TAPR/AMSAT DSP-93 modem kit, and am now anxiously awaiting the arrival of the kit. In the interim, I was wondering if the modem supports 400 BPSK telemetry reception (A0-13)? If not, are there any plans to do so? I believe that the Phase 3D spacecraft will also support this format, so this mode will continue to live on even after the demise of A0-13.

Best 73s  
John KA1JMF

---

## 80. [DSP-93:696] Re: DSP-93 kit shipments -Reply

From: PAUL SHUCH <PSHUCH@pct.edu>  
Date: Mon, 22 May 1995 09:03:34 -0400  
To: dsp-93@tapr.org  
Message-ID: <sfc05321.012@pct.edu>  
Rendered body type: text/plain

>>> Greg Jones <gjones@tenet.edu> 05/17/95 04:39pm >>>  
I have to take some of the blame in the delay this time, since I had my PhD exams

So how'd they go, Doc?

---

## 81. Re: [DSP-93:724] 400 BPSK?

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 22 May 1995 13:49:22 +0000  
To: dsp-93@tapr.org  
Message-ID: <9505221343.AA07354@camel.campbell.edu>  
Rendered body type: text/plain

John, check out this doc file :-)

contents of PSK\_93T.DOC:

-----  
Radio Port 1!

DATA is direct from the DSP-93 UART at 1200 baud! Set your terminal program accordingly after loading this code with DSPLOAD.EXE!  
=====

```
PSK_93T2.OBJ - Radio Port 1 - A0-13 400 baud ASCII telemetry demodulator
=====
```

Here is a rough but working A0-13 psk telemetry demod. I have the dreaded 01Ah (control-z) filtered out so you can look at/tweak the

received telemetry as an ASCII file. Tune for a 1200 Hz carrier, adjust audio so the amplitude LED is about 30-50 % lit as showing some variation.

The tuning light blinks to tell you to tune your frequency up a bit (auto tuning disabled right now). The two LED's on the far left light up tell you that you have detected the telemetry "sync" vector - you get 514 characters and it pauses until it decodes another sync vector. DCD is not implemented for PC3...software yet.

The output is from the DSP-93 UART at 1200 bps. I use PROCOMM to receive using RAW ASCII download capture. When you exit this SW the UART will be set up for 1200 bps so reset the DSP-93 to get back to 19200.

```
=====
PSK_93P2.OBJ - Radio Port 1 - A0-13 400 baud front end for PC3.EXE
=====
This code is a front end A0-13 demodulator that can DIRECTLY feed the PC3.EXE
software by Ron, W8GUS, for telemetry analysis.
```

73 Frank WB5IPM

#### License and Disclaimer

A no cost, non-exclusive license to use the enclosed software is granted to all users of the TAPR/AMSAT DSP-93 DSP computer, with the restriction that it be used only for non-commercial amateur radio applications. ALL other uses are prohibited under this license. Copyright 1991, 1992, 1993 and 1994, Frank H. Perkins, Jr., WB5IPM. All rights reserved.

This software is EXPERIMENTAL. It is offered AS IS, without Warranty or Guarantee of any kind. NO representation is made that this software is suitable for any purpose, or that its operation is reliable. Use this software strictly at your own risk. The author, AMSAT and TAPR accept no liability for any loss or injury arising directly or indirectly from its use.

Never use this software under circumstances where its failure to operate or its failure to operate as expected, or the failure of the attendant hardware could create a dangerous situation, cause loss of data, or could cause damage to your amateur radio equipment, computer equipment, or any other equipment or property.

Please contact Greg Jones at TAPR or the author for information on commercial licenses of this software.

Frank H. Perkins, Jr.

```
>I recently purchased the TAPR/AMSAT DSP-93 modem kit, and am now anxiously
>awaiting the arrival of the kit. In the interim, I was wondering if the modem
>supports 400 BPSK telemetry reception (AO-13)? If not, are there any plans to
>do so? I believe that the Phase 3D spacecraft will also support this format,
>so this mode will continue to live on even after the demise of AO-13.
>
>Best 73s
>John KA1JMF
>
>
>
```

Mark L. Hammond [KC4EBR]

---

## 82. Re: [DSP-93:723] Software Developments?

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 22 May 1995 13:53:29 +0000  
To: dsp-93@tapr.org  
Message-ID: <9505221347.AA07382@camel.campbell.edu>  
Rendered body type: text/plain

Hi Steve,

I can say that the code you mention below is not in the next software release. As far as anyone working on these, I simply don't know.

>I am eagerly awaiting to receive my kit here downunder, and am

```

>interested to see what modem's etc are currently under development.
>
>In particular I am interested in:
>
> POC5AG decode (maybe encode as well)
>
> 56/64K Data ala GRAPES style modem
>
>Is anyone working on this sort of thing, or does anyone know of
>someone else working on projects along these lines.
>
>Thanks in Advance
>73's
>Steve
>
>>From ZL downunder - The home of the America's Cup
>
>
>-----
>Steve Davis ZL2UCX | Internet: steve@zl2ucx.gen.nz
>P O Box 120 | Packet: zl2ucx@zl3ac.#80.nzl.oc
>Christchurch |
>New Zealand | Fax: +64-3-343-0461
>-----
>
>
Mark L. Hammond [KC4EBR]

```

---

### 83. Re: [DSP-93:724] 400 BPSK?

```

From: dmedley@indirect.com (David J. Medley)
Date: Mon, 22 May 1995 09:18:29 -0700
To: dsp-93@tapr.org
Message-ID: <199505221618.JAA19706@bud.indirect.com>
Rendered body type: text/plain

>I recently purchased the TAPR/AMSAT DSP-93 modem kit, and am now anxiously
>awaiting the arrival of the kit. In the interim, I was wondering if the modem
>supports 400 BPSK telemetry reception (A0-13)? If not, are there any plans to
>do so? I believe that the Phase 3D spacecraft will also support this format,
>so this mode will continue to live on even after the demise of A0-13.
>
>Best 73s
>John KA1JMF
Hi John. Yes there is an A0-13 telemetry modem supplied with the kit. I am
presently experimenting with it without much success so far. The main reason
is A0-13's signal has been so poor at this QTH. I will keep posting messages
here as to my progress.
73 de Dave KI6QE
>
>

```

---

### 84. Re: [DSP-93:725] Re: DSP-93 kit shipments -Reply

```

From: Greg Jones <gjones@tenet.edu>
Date: Mon, 22 May 1995 13:24:04 -0500 (CDT)
To: dsp-93@tapr.org
Message-ID: <199505221824.NAA23906@Alice-Thurman.tenet.edu>
Rendered body type: text/plain

OH - guess I should have said...I am now candidate Greg (ABD - All but
dissertation) :-}

Cheers - Greg

According to PAUL SHUCH:
>
>
>
> >>> Greg Jones <gjones@tenet.edu> 05/17/95 04:39pm >>>
> I have to take some of the blame in the delay this time, since I had my PhD
> exams
>
>
> So how'd they go, Doc?
>
>
>

```

## 85. Heatstroke report

From: Mills@huey.udel.edu  
Date: Mon, 22 May 95 16:28:28 EDT  
To: dsp-93@tapr.org  
Message-ID: <9505221628.aa03884@huey.udel.edu>  
Rendered body type: text/plain

Folks,

You may remember my posting which described heatstroke symptoms in my DSP-93. Briefly, some programs, such as the oscilloscope and my HF modem, crash when the case covers are in place and the unit stabilizes at operating temperature. When the stack is out of the case in free air, it works wonderfully. As reported previously, the power supply volts and amps are within nominals and all bus signals, including the 40-MHz oscillator and reset signals, appear normal before and after heatstroke. I swapped memory chips and reseated all ICs, but with no affect. I flexed both the analog and digital boards and stressed components, sockets, etc., rather viciously, but with no affect. The TAPR guys kindly sent me a pair of PALs U112 and U113, but this didn't help either.

With a digital thermometer I measured the room ambient at 24 deg C. I wiggled the thermometer probe between the digital and analog boards and measured the temperature at about 28 deg C. Everything worked fine. I wrapped the stack in plastic foil to keep in the heat and powered up. It worked okay until the temperature rose to about 38 deg C, when it died of heatstroke. Eventually, the temperature stabilized at about 40 deg C. Ordinarily, I would expect technology like this to work well above that temperature. A test when I tried to heat the digital board without heating the analog board appeared to implicate the digital board, but not conclusively.

Interestingly enough, even when operating at 40 deg C, the monitor runs and can load and run some programs, such as the memory test and some TAPR programs. While my FSK modem program seems to be the most vulnerable to heatstroke (it is vulgarly obese), TAPR programs, such as the digital oscilloscope, are also vulnerable. They all die in about the same way - the program locks up, apparently in a loop, with no recovery except reset/reboot. I thought this might be a stuck-at fault on an interrupt line, but all interrupt and reset lines are normal. Also, the AIO handshake signals continue normal operation. Suspicious of a memory problem, I swapped the SRAMs, but with no difference in behavior. The only thing left would appear to be the CPU itself.

My original intent in acquiring the DSP-93 was both to freshen my own expertise in modern DSP hardware and software and to use the unit for classroom demos and projects. So, I would really like to fix this thing to operate as the designers intended. It seems to me I have the following options:

1. Continue trying to find what part is bad by asking TAPR to exchange ICs. The next most probable culprit may be the CPU itself. This works only if an IC is in fact bad. The board(s) themselves are not above suspicion.
2. Borrow a working DSP-93 in order to exchange all pluggable parts and boards for test. If it turns out a board is bad, then buy a replacement board and board-mounted parts (if TAPR can deal with that).
3. Cut holes in the case and install a small fan to keep the unit cool. This works only if the ambient temperature can be kept less than 34 deg C (93 deg F), which is not always possible.
4. Buy another DSP-93 and keep this one for spare parts. I am in fact prepared to do this if all else fails.

Suggestions on a good strategy to proceed from here would be cherished.

Dave, W3HCF

---

## 86. Possible power problems on the DSP-93

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 22 May 1995 20:46:34 -0500  
To: dsp-93@tapr.org  
Message-ID: <abe6ed59010210047d1d@[204.181.160.16]>  
Rendered body type: text/plain

Roy, W0SL, and I have noticed some strange current values on the two boards, and Roy experienced some strange resets. I traced mine down to a broken 7805 on board 2 and Roy's problem appears to be a broken 7805 on board 1.

It turns out that the +5V supplies from the two boards are connected together after the .22 ohm resistors. Thus if one supply fails, all the load falls to the other.

The voltage drops across the two .22 ohm resistors should be less than 100 mV. If the drop across one is zero (as it was in my case), check for broken connections or leads on the 7805's with the heat sinks.

Be careful to limit der fingerpoken around the regulators and heatsinks.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 87. HF FSK modem update

From: Mills@huey.udel.edu  
Date: Tue, 23 May 95 1:19:04 EDT  
To: dsp-93@tapr.org  
Message-ID: <9505230119.aa05144@huey.udel.edu>  
Rendered body type: text/plain

Folks,

The HF FSK modem mentioned previously on this list has been updated. The principal change is a much more sophisticated signal quality measurement and an awesome autostart function. I also cleaned up the command set and the baseband signal processing. The synchronous-mode performance I think is now close to optimum; at least, the phase-lock loop locks when I think it should and resets/relocks when I think it should. The distribution is in pub/ntp/modem.tar.Z and pub/ntp/modem.zip on host louie.udel.edu should your interest pique.

The curious may note lots of SITOR/AMTOR code lurking in the source. That code, which is to operate as a matched-filter receiver, is still in vapor phase.

Dave

---

## 88. Re: [DSP-93:730] Heatstroke report

From: dmedley@indirect.com (David J. Medley)  
Date: Tue, 23 May 1995 09:05:11 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505231605.JAA15084@bud.indirect.com>  
Rendered body type: text/plain

>>

>Suggestions on a good strategy to proceed from here would be cherished.

>

>Dave, W3HCF

>

Dave I had the same problem with mine but it was coupled with another problem(s) at the same time. Replacing the GALs seems to have solved all of the problems here. Mine has been running quite happily in its box with an ambient temperature in the shack of 95F (No air conditioning yet!!). While I was in New Zealand with Ian Ashley he commented that he thought the voltage from the wall transformer was too high leading to excessive heat. You might want to try a wall transformer of lower voltage and see if this helps. He suggested something like 7.5v if I remember correctly.

73 de Dave, KI6QE/VK2IMJ

---

## 89. Re: [DSP-93:732] HF FSK modem update

From: dmedley@indirect.com (David J. Medley)  
Date: Tue, 23 May 1995 09:13:06 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505231613.JAA16646@bud.indirect.com>  
Rendered body type: text/plain

>

>The curious may note lots of SITOR/AMTOR code lurking in the source. That  
>code, which is to operate as a matched-filter receiver, is still in vapor  
>phase.



>  
>Dave

Dave you sent me some info before on this but I have changed my INTERNET connect to PPP and in the changeover I lost some back traffic.  
I am very interested in the AMTOR/SITOR project and also in RTTY. I assume your present modem is packet only?  
I will download your present manum opus and let you know how I get on.  
73 de Dave KI6QE  
>

---

## 90. Re: [DSP-93:731] Possible power problems on the DSP-93

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 23 May 1995 17:51:16 +0000  
To: dsp-93@tapr.org  
Message-ID: <9505231745.AA13312@camel.campbell.edu>  
Rendered body type: text/plain

Mine have been broken and resoldered a few times. It pays to put the thing in the box ASAP.

>Roy, W0SL, and I have noticed some strange current values on the two  
>boards, and Roy experienced some strange resets. I traced mine down to a  
>broken 7805 on board 2 and Roy's problem appears to be a broken 7805 on  
>board 1.  
>  
>It turns out that the +5V supplies from the two boards are connected  
>together after the .22 ohm resistors. Thus if one supply fails, all the  
>load falls to the other.  
>  
>The voltage drops across the two .22 ohm resistors should be less than 100  
>mV. If the drop across one is zero (as it was in my case), check for broken  
>connections or leads on the 7805's with the heat sinks.  
>  
>Be careful to limit der fingerpoken around the regulators and heatsinks.  
>  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 91. Re: [DSP-93:730] Heatstroke report

From: Roy Welch <rdw@crl.com>  
Date: Tue, 23 May 1995 13:05:50 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950523125722.29528B-100000@crl4.crl.com>  
Rendered body type: text/plain

Dave, as a quick check. Check the voltage drop across R210 and R107. If either of these is zero or very low, it is an indication that the power supply on that board is inoperative. Since the boards are stacked, if one of the supplies fail, the other one has to pick up the added load. This will make one heatsink run very hot while the other is cool.

I had this problem caused by a broken pin on VR100. I began to get symptoms like resetting of the DSP93 for no reason, etc.

You should check the fuse on that board and be sure that the supply is working. I had a drop of 140mv across R210 and zero across R107 until I fixed VR100 and then the drop across R210 dropped back to 67mv and the top heatsink cooled back to "normal."

Let me know if this works for you as it did for me.

73, Roy

---

## 92. Re: [DSP-93:736] Re: Heatstroke report

From: Mills@huey.udel.edu  
Date: Tue, 23 May 95 17:13:26 EDT  
To: dsp-93@tapr.org

Cc: dsp-93@tapr.org  
Message-ID: <9505231713.aa08122@huey.udel.edu>  
Rendered body type: text/plain

Roy,

I measured the current for both boards, separately and together, and found everything nominal. Both heatsinks are about the same temperature - warm, but I can pinch either of them fingerwise with no singed flesh. You raise an interesting issue; however, in that a hot, flaky regulator might let loose a pulse on a supply rail. That doesn't sound likely, since there a a bunch of caps on each rail, but who knows? Measurements with a DVM didn't show anything unusual in any case. Thanks for the ideas.

Dave

---

### 93. Re: [DSP-93:737] Re: Heatstroke report

From: Roy Welch <rdw@crl.com>  
Date: Tue, 23 May 1995 18:47:32 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950523184416.7038A-100000@crl.crl.com>  
Rendered body type: text/plain

Just for the heck of it hang a 100 Mf electrolytic on the C121 and C122 spots if you have the places. They were on the beta boards but were not populated.  
73, Roy

On Tue, 23 May 1995 Mills@huey.udel.edu wrote:

> Roy,  
>  
> I measured the current for both boards, separately and together, and found  
> everything nominal. Both heatsinks are about the same temperature - warm,  
> but I can pinch either of them fingerwise with no singed flesh. You raise  
> an interesting issue; however, in that a hot, flaky regulator might let  
> loose a pulse on a supply rail. That doesn't sound likely, since there  
> a a bunch of caps on each rail, but who knows? Measurements with a DVM  
> didn't show anything unusual in any case. Thanks for the ideas.  
>  
> Dave  
>  
Have you looked at the supply voltages with a scope?

73, Roy

---

### 94. Re: [DSP-93:738] Re: Heatstroke report

From: Mills@huey.udel.edu  
Date: Tue, 23 May 95 23:17:13 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9505232317.aa09018@huey.udel.edu>  
Rendered body type: text/plain

Roy,

Oh yes; 5-V ripple on both boards is unmentionable; shot and flicker noise is maybe 10 mV whisker-to-whisker. You gave me and idea, though; watch the volts as the unit heats up and look for a spike. Very tedious, that, but now in process.

Dave

---

### 95. ARRL RTTY bulletins?

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 24 May 1995 12:33:30 +0000  
To: dsp-93@tapr.org  
Message-ID: <9505241228.AA16934@camel.campbell.edu>  
Rendered body type: text/plain

Hello gang,

Does anybody have the ARRL RTTY bulletin schedule, with freqs? Trying to test Dave's HF modem out, and I can't find a signal this morning.

(Shame on me, I'm not an ARRL member so I don't have a QST.)

Oh, hmmm...bet I can grab it from a web server site....what CAN'T you find on the web?!?!

## 96. Re: [DSP-93:739] Re: Heatstroke report

From: Roy Welch <rdw@crl.com>  
Date: Wed, 24 May 1995 06:00:54 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950524055639.18345B-100000@crl8.crl.com>  
Rendered body type: text/plain

Do you have a spot for C121 and C122?. I had a very small (mv range) notch at a 60 hz rate that I cured with the caps. Nothing like you are having. Measure the drops across the two 0.22 ohm resistors, R210 and R107 I think. What are they? This may dovetail with another possibility.

73, Roy

On Tue, 23 May 1995 Mills@huey.udel.edu wrote:

> Roy,  
>  
> Oh yes; 5-V ripple on both boards is unmentionable; shot and flicker noise  
> is maybe 10 mV whisker-to-whisker. You gave me and idea, though; watch the  
> volts as the unit heats up and look for a spike. Very tedious, that, but  
> now in process.  
>  
> Dave  
>

---

## 97. Re: [DSP-93:740] ARRL RTTY bulletins?

From: Roy Welch <rdw@crl.com>  
Date: Wed, 24 May 1995 07:43:25 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950524073413.2709A-100000@crl3.crl.com>  
Rendered body type: text/plain

On Wed, 24 May 1995, Mark L. Hammond wrote:

> Does anybody have the ARRL RTTY bulletin schedule, with freqs? Trying to  
> test Dave's HF modem out, and I can't find a signal this morning.

According to the latest QST:

Freq: 3.625, 7.095, 14.095, 18.1025, 21.095, 28.095 & 147.555.  
Bulletins are sent at 45.45 baud Baudot, 100 baud Amtor, FEC Mode B. The  
110 Baud ASCII will be sent only as time allows.

Times (Central):  
10am - Tues thru Fri  
5pm, 8pm & 11pm - Daily

73, Roy

> (Shame on me, I'm not an ARRL member so I don't have a QST.)

Yes, yes!

---

## 98. RTTY W1AW

From: dmedley@indirect.com (David J. Medley)  
Date: Wed, 24 May 1995 02:55:31 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505240955.CAA03189@bob.indirect.com>  
Rendered body type: text/plain

I forgot the times. They are (EST) 8 9 10 11 AM  
3 4 5 6 PM  
6 7 8 9 PM  
9 10 11 12PM

Mark you really should join the ARRL. QST and QEX are the best ham mags and sources of information. I have a complete set of QST except for a few parts of Vol 1  
73 de Dave

## 99. Re: [DSP-93:740] ARRL RTTY bulletins?

From: Mills@huey.udel.edu  
Date: Wed, 24 May 95 12:57:29 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9505241257.aa11504@huey.udel.edu>  
Rendered body type: text/plain

Mark,

CFH is on or about 121.5, 4271, 6497, 10536 and 13510 kHz. I copy these transmitters USB at 75 baud. Transmissions are WEFAX from the hour and RTTY from the half-hour. Very reliable here in Delaware. Seems to me the ARRL bulletins are at 18, 21 and 00 EST, but that's without checking QST. Most of my diddling has been using CFH.

Dave

---

## 100. Re: [DSP-93:741] Re: Heatstroke report

From: Mills@huey.udel.edu  
Date: Wed, 24 May 95 13:30:36 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9505241330.aa11537@huey.udel.edu>  
Rendered body type: text/plain

Roy,

66.4 mV for the analog board, 35.5 mV for the analog board. No ripple I can measure. As requested, I reported the supply currents, individually for each board and together, but I can't find the message buried in the some 2000 messages received in the last couple of months. Nobody hollered at my report, so I concluded the amps were nominal. For check, I ran the memory test overnight and logged the numbers to a file. Once in a while the 7 in the string 1234567 was dropped. Since there were no error printouts, I assume this represents only a garble on the UART line, which occurs in some other "nominal" cases as well.

Dave

---

## 101. Re: [DSP-93:745] Re: Heatstroke report

From: Roy Welch <rdw@crl.com>  
Date: Wed, 24 May 1995 11:23:33 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950524112256.5644A-100000@crl6.crl.com>  
Rendered body type: text/plain

Dave, I have exhausted my box of tricks, as small as it is.  
73, Roy

On Wed, 24 May 1995 Mills@huey.udel.edu wrote:

> Roy,  
>  
> 66.4 mV for the analog board, 35.5 mV for the analog board. No ripple I  
> can measure. As requested, I reported the supply currents, individually  
> for each board and together, but I can't find the message buried in the  
> some 2000 messages received in the last couple of months. Nobody hollered  
> at my report, so I concluded the amps were nominal. For check, I ran  
> the memory test overnight and logged the numbers to a file. Once in  
> a while the 7 in the string 1234567 was dropped. Since there were no  
> error printouts, I assume this represents only a garble on the UART  
> line, which occurs in some other "nominal" cases as well.  
>  
> Dave  
>

---

## 102. hf printing good!

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 24 May 1995 20:50:54 +0000  
To: dsp-93@tapr.org  
Message-ID: <9505242045.AA20209@camel.campbell.edu>  
Rendered body type: text/plain

Dave,

Your latest "hotshot" HF modem is working fine here. Thanks for the freqs. and mode info. That 75 baud stuff sure moves faster than the 45.45.

Oh, I am using option "a1" ;-) Works like a charm! Good job!  
Thanks for sharing your software goodies with us appliance operators.....

Mark L. Hammond [KC4EBR]

---

### 103. TI WWW Site

From: mzingman@kendall.mdcc.edu (Mike Zingman)  
Date: Wed, 24 May 1995 17:26:37 -0400  
To: dsp-93@tapr.org  
Message-ID: <199505242121.RAA10321@kendall.mdcc.edu>  
Rendered body type: text/plain  
  
dsp-93,

If you did not see the announcement, Texas Instruments has a new WWW home page that has a lot of interesting information. For example the first two chapters of the 'C25 manual are accessible. It is a pretty nice site to pick up examples for the TI line of DSPs as well.

The URL is:

<http://www.ti.com/sc/docs/dsps/dsphone.htm>

Enjoy,

Mike

---

### 104. Re: [DSP-93:748] TI WWW Site

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 24 May 1995 16:49:04 -0500  
To: dsp-93@tapr.org  
Message-ID: <abe959dc0002100446f7@[204.181.160.23]>  
Rendered body type: text/plain

>dsp-93,  
>  
>If you did not see the announcement, Texas Instruments has a new WWW home  
>page that has a lot of interesting information. For example the first two  
>chapters of the 'C25 manual are accessible. It is a pretty nice site to  
>pick up examples for  
>the TI line of DSPs as well.  
>  
>The URL is:  
>  
><http://www.ti.com/sc/docs/dsps/dsphone.htm>  
>  
>Enjoy,  
>  
>Mike

That's really neat. Lot's of stuff.

Now when I cant find the 320C25 memory map, I have another place to look.

Thanks.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 105. \*NEW dspload.exe\*

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sat, 27 May 1995 02:42:07 +0000  
To: dsp-93@tapr.org  
Message-ID: <9505270234.AA05108@camel.campbell.edu>  
Rendered body type: text/plain  
  
Hello All,

I have just uploaded a new version of DSPLOAD.EXE and DSPLOAD.C (source) into the upload subdirectory for Bob, N5BRG.

This version fixes a small problem with the earlier version when trying to

load .obj files of certain sizes to certain locations (I hope I got that right....)

Anyhow, ALL users will want at least DSPLOAD.EXE to replace their existing version.

Mark L. Hammond [KC4EBR]

---

## 106. '95 DCC Proceedings Deadline

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 26 May 1995 23:59:41 -0500 (CDT)  
To: tapr-bb@tapr.org (TAPR-BB mailing), bbssig@tapr.org (BBS SIG mailing),  
netsig@tapr.org (NETSIG mailing), aprssig@tapr.org (APRS SIG),  
dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199505270459.XAA24090@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

1995 ARRL Digital Communications Conference  
Proceedings Deadline Information  
-----

Anyone interested in digital communications is invited to submit a paper for publication in the 1995 Conference Proceedings. Presentation at the Conference is not required for publication. If you know of someone who is doing great things with digital communications, be sure to personally tell them about this! Papers are due by July 21, 1995, and should be submitted to Maty Weinberg, ARRL, 225 Main Street, Newington, CT 06111 or via the Internet to mweinberg@arrl.org. Please contact Maty for detailed format requirements.

Deadline: July 21, 1995 (Friday)

Start writing those papers now!

This is your opportunity to let others know what you have been doing.

---

## 107. (no subject)

From: danie.brynard@pixie.co.za (Danie Brynard)  
Date: Sun, 28 May 95 10:14 WET  
To: dsp-93@tapr.org  
Message-ID: <m0sFdUq-000E4QC@pixie.co.za>  
Rendered body type: text/plain

Why was 1200 psk chosen for some sattelites and not say 1200 baud non-coherent FSK ?

Danie zs6awk

---

## 108. (no subject)

From: dmedley@indirect.com  
Date: Mon, 29 May 1995 15:48:26 -0700  
Message-ID: <199505292248.PAA26962@bob.indirect.com>  
Rendered body type: text/plain

[Empty message body]

---

## 109. (no subject)

From: dmedley@indirect.com  
Date: Mon, 29 May 1995 15:54:30 -0700  
Message-ID: <199505292254.PAA26973@bob.indirect.com>  
Rendered body type: text/plain

[Empty message body]

---

## 110. (no subject)

From: dmedley@indirect.com  
Date: Mon, 29 May 1995 13:46:47 -0700  
Message-ID: <199505292046.NAA26707@bob.indirect.com>  
Rendered body type: text/plain

[Empty message body]

---

## 111. (no subject)

From: dmedley@indirect.com  
Date: Mon, 29 May 1995 13:45:31 -0700  
Message-ID: <199505292045.NAA26705@bob.indirect.com>  
Rendered body type: text/plain

[Empty message body]

---

## 112. FTP?

From: dmedley@indirect.com (David J. Medley)  
Date: Sun, 28 May 1995 10:00:15 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505281700.KAA21399@bob.indirect.com>  
Rendered body type: text/plain

Has anyone had any problems with ftp.tapr.org? I have been trying since yesterday to get the new dspload file but have been unable to connect with this site. listproc@tapr.org also has been getting bounced.  
Dave KI6QE

---

## 113. Re: [DSP-93:750] \*NEW dspload.exe\*

From: fperkins@onramp.net  
Date: Sun, 28 May 1995 09:45:01 -0500  
To: dsp-93@tapr.org  
Message-ID: <199505281445.JAA02044@ns.onramp.net>  
Rendered body type: text/plain

Hi Gang,

Tried to get into ftp.tapr.org this morning to pull copies of the manuals and Mark's new disks but I can't seem to get a connect. Is this a problem at my end or over at ...tapr.org?

73 Frank WB5IPM

---

## 114. ftp.tapr.org up

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 30 May 1995 15:38:43 +0000  
To: dsp-93@tapr.org  
Message-ID: <9505301532.AA06026@camel.campbell.edu>  
Rendered body type: text/plain

Gang,

It appears (after an outage) that ftp.tapr.org is back up (Tues, 15:36 UTC)

Remember, you will all want to get the new dspload.exe file in the upload directory.

Mark L. Hammond [KC4EBR]

---

## 115. Re: [DSP-93:757] FTP?

From: Dave Creek <dcreek@pixi.com>  
Date: Tue, 30 May 1995 05:42:29 -1000 (HST)  
To: "David J. Medley" <dmedley@indirect.com>  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.PCW.3.91.950530053637.6655A-100000@dip024.pixi.com>  
Rendered body type: text/plain

On Tue, 30 May 1995, David J. Medley wrote:

> Has anyone had any problems with ftp.tapr.org? I have been trying since  
> yesterday to get the new dspload file but have been unable to connect with  
> this site. listproc@tapr.org also has been getting bounced.  
> Dave KI6QE

For some reason the ftp.tapr.org name fails a lot of the DSN lookups.  
Try dingus.n5lyt.datarace.com or IP 204.96.214.85

Dave Creek, NH6BA  
Ewa Beach, HI  
dcreek@pixi.com

---

## 116. Re: [DSP-93:752]

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 30 May 1995 11:01:03 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00abf0f151f355@[204.96.0.74]>  
Rendered body type: text/plain

>Why was 1200 psk chosen for some sattelites and not say 1200 baud  
>non-coherent FSK ?  
>  
>Danie zs6awk

This question is probably more appropriate for AMSAT-BB@AMSAT.Org

Good luck.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 117. LUSAT Results with FT-736

From: dmedley@indirect.com (David J. Medley)  
Date: Tue, 30 May 1995 02:14:45 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505300914.CAA28615@bob.indirect.com>  
Rendered body type: text/plain

Just to report that I have successfully interfaced my Yaesu 736 with the 1200 baud satellite software. The operation appears to be equal to that of the original TAPR FSK modem which I used for many years. The only problem I encountered was that the "smart tune" lost it when the satellite was overhead and the doppler was at its maximum. I am not sure of this and will check it again. It may just have been loss of signal.

The interface is via small 5 volt relays and this proved to be extremely simple and effective. The relays are the size of a 16 pin DIP package and are taped to the cable. To the radio I just use the mike/phones connections on the front panel.

Anyway I got plenty of directory entries this morning using the AMSAT PB/PG software.

I will continue working with this activity of the DSP-93 and will write it up and post it on the FTP site in due course.

Dave KI6QE

---

## 118. Connecting to the ftp site

From: Roy Welch <rdw@crl.com>  
Date: Tue, 30 May 1995 09:10:04 -0700 (PDT)  
To: DSP-93 Info <dsp-93@tapr.org>  
Message-ID: <Pine.SUN.3.91.950530090847.12738B-100000@crl9.crl.com>  
Rendered body type: text/plain

I just tried successfully to connect to the anonymous ftp.tapr.org site.

Maybe it's fixed now.

73, Roy

---

## 119. Re: [DSP-93:757] FTP?

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 30 May 1995 11:12:26 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199505301612.LAA16875@Joyce-Perkins.tenet.edu>  
Rendered body type: text/plain

The system was down over the weekend.

greg

According to David J. Medley:

>

> Has anyone had any problems with ftp.tapr.org? I have been trying since  
> yesterday to get the new dspload file but have been unable to connect with  
> this site. listproc@tapr.org also has been getting bounced.

> Dave KI6QE

>

>

---

## 120. Re: [DSP-93:758] Re: \*NEW dspload.exe\*

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 30 May 1995 11:13:20 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199505301613.LAA16986@Joyce-Perkins.tenet.edu>  
Rendered body type: text/plain

Depends .... Lee got the system started sometime this morning...you should try it again.

It was down over the weekend.

Greg



According to fperkins@onramp.net:  
>  
> Hi Gang,  
>  
> Tried to get into ftp.taprr.org this morning to pull copies of the manuals  
> and Mark's new disks but I can't seem to get a connect. Is this a problem  
> at my end or over at ...taprr.org?  
>  
> 73 Frank WB5IPM  
>  
>  
>

---

## 121. Re: [DSP-93:755]

From: Roy Welch <rdw@crl.com>  
Date: Tue, 30 May 1995 09:05:28 -0700 (PDT)  
To: dsp-93@taprr.org  
Message-ID: <Pine.SUN.3.91.950530090456.12600C-100000@crl9.crl.com>  
Rendered body type: text/plain

Dave, we didn't get any text of your message.  
73, Roy

On Tue, 30 May 1995 dmedley@indirect.com wrote:

---

## 122. Re: [DSP-93:763] Connecting to the ftp site

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 30 May 1995 12:51:35 -0500 (CDT)  
To: dsp-93@taprr.org  
Message-ID: <199505301751.MAA01757@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

taprr.org was up the entire weekend...the problem was in a router at the  
office that our system operates at. Since it was a holiday weekend - we had  
to wait till they all got back to work :-)

Cheers - Greg

According to Roy Welch:

>  
> I just tried successfully to connect to the anonymous ftp.taprr.org site.  
> Maybe it's fixed now.  
> 73, Roy  
>  
>  
>

---

## 123. [DSP-93:751] '95 DCC Proceedings Deadline -Reply

From: PAUL SHUCH <PSHUCH@pct.edu>  
Date: Tue, 30 May 1995 15:44:02 -0400  
To: dsp-93@taprr.org  
Cc: lweinberg@arrl.org  
Message-ID: <sfc3c54.085@pct.edu>  
Rendered body type: text/plain

>>> Internet to mweinberg@arrl.org.

Last time I used it, Maty's email address was not mweinberg@ . . . but  
rather lweinberg@arrl.org. (her first name is Lori, though she goes by  
Maty.) 73, Paul n6tx (as some of you know, my first name is Howard,  
although I go by Paul!)

---

## 124. Re: [DSP-93:762] LUSAT Results with FT-736

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 30 May 1995 21:08:13 +0000  
To: dsp-93@taprr.org  
Message-ID: <9505302101.AA07796@camel.campbell.edu>  
Rendered body type: text/plain

Good job, Dave!

Let us know about the doppler on high passes. My experience with the code  
(which modem are you using?? I am using PSK93R2J.obj) is that what Frank  
has provided works fine on my Kenwood TS-790A, even on an 89deg pass. This  
rig makes 20 Hz mic clicks on SSB.

>Just to report that I have successfully interfaced my Yaesu 736 with the  
>1200 baud satellite software. The operation appears to be equal to that

>of the original TAPR FSK modem which I used for many years. The only  
>problem I encountered was that the "smart tune" lost it when the satellite was  
>

Mark L. Hammond [KC4EBR]

---

## 125. AO-13 Telemetry

From: dmedley@indirect.com (David J. Medley)  
Date: Tue, 30 May 1995 15:03:57 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505302203.PAA01644@bud.indirect.com>  
Rendered body type: text/plain

Would like to hear from anybody who has tried the AO-13 telemetry modem. I have had absolutely zero results here so far which suggests I am doing something wrong. The TNC is set to 1200 baud and I am using Procomm Plus. The radio is in USB mode.  
73 de Dave KI6QE

---

## 126. PSK results

From: dmedley@indirect.com (David J. Medley)  
Date: Tue, 30 May 1995 15:21:35 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505302221.PAA05909@bud.indirect.com>  
Rendered body type: text/plain

For Mark Hammond.  
I am using PSK\_93AK.OBJ. The one you are using I don't have.  
This morning I tried it again on PACSAT and with the same result. At max doppler the beeper could not keep up and it lost lock and had to be manually reset. The Yaesu tunes in 10Hz steps. This may be something to do with the switching time of the relays perhaps? I have no idea what this is so it is hard to tell. Apart from this the performance is just fine. I will try some of the other modems and see if that makes any difference.  
For Frank Perkins. Perhaps you could suggest the best modem to use with the Yaesu. I am really very encouraged with the results I am getting.  
I am only having to use 10-15 watts on the uplink which is better than I had in California when it was often necessary to use an amplifier to get the satellite's attention.  
73 de Dave

---

## 127. Re: [DSP-93:770] AO-13 Telemetry

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 30 May 1995 22:22:26 +0000  
To: dsp-93@tapr.org  
Message-ID: <9505302215.AA08169@camel.campbell.edu>  
Rendered body type: text/plain

Dave,

Does the LED flash/vary with the audio of the bird? Do you see the tuning pulses on LED 4? Are you feeding audio from your radio into radio port 1 on the DSP-93?  
(silly and obvious questions, but I had to ask....)

By the way, you don't NEED a "real" TNC. You should be trying to read data DIRECTLY from the DSP-93 comport at 1200 baud.

Load the .obj file with dspload (or D93WE) at 19200, and THEN switch to PCPlus on the same comport that you use to load the DSP-93. Make sure PCPlus is set for 1200 baud, and that you try to download with RAW ASCII mode.

I have loaded the code and played with it, but have never tried to print ao-13 with a "good" signal (crappy 2M receive here).

>Would like to hear from anybody who has tried the AO-13 telemetry modem. I  
>have had absolutely zero results here so far which suggests I am doing  
>something wrong. The TNC is set to 1200 baud and I am using Procomm Plus.  
>The radio is in USB mode.  
>73 de Dave KI6QE  
>  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 128. Re: [DSP-93:769] Re: LUSAT Results with FT-736

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 30 May 1995 17:29:30 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02abf14bba30d8@[204.96.0.97]>  
Rendered body type: text/plain

Dave,

The most critical parameter is the mic click frequency step value. What is your step. Too small and it can't keep up overhead -- too large and accuracy suffers.

Ron

>Let us know about the doppler on high passes. My experience with the code  
>(which modem are you using?? I am using PSK93R2J.obj) is that what Frank  
>has provided works fine on my Kenwood TS-790A, even on an 89deg pass. This  
>rig makes 20 Hz mic clicks on SSB.  
>  
>>Just to report that I have successfully interfaced my Yaesu 736 with the  
>>1200 baud satellite software. The operation appears to be equal to that  
>>of the original TAPR FSK modem which I used for many years. The only  
>>problem I encountered was that the "smart tune" lost it when the  
>>satellite was  
>>  
>  
>Mark L. Hammond [KC4EBR]

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 129. Re: [DSP-93:770] AO-13 Telemetry

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 30 May 1995 17:34:29 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d04abf14cc46fc7@[204.96.0.97]>  
Rendered body type: text/plain

>Would like to hear from anybody who has tried the AO-13 telemetry modem. I  
>have had absolutely zero results here so far which suggests I am doing  
>something wrong. The TNC is set to 1200 baud and I am using Procomm Plus.  
>The radio is in USB mode.  
>73 de Dave KI6QE

>From the .DOC file:  
"DATA is direct from the DSP-93 UART at 1200 baud! Set your terminal  
program accordingly after loading this code with DSPLOAD.EXE!"

A TNC is not used!!!!!!!!!!!!!!

The output is not formatted, nor broken into blocks, nor are line breaks  
included. This sometimes make the output look like garbage. Perhaps you  
can change the program to break the output into lines (where appropriate)  
and blocks with some nice formatting for the telemetry.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 130. Re: [DSP-93:774] Re: AO-13 Telemetry

From: fperkins@onramp.net  
Date: Tue, 30 May 1995 20:39:43 -0500  
To: dsp-93@tapr.org  
Message-ID: <199505310139.UAA15537@ns.onramp.net>  
Rendered body type: text/plain

A SW program called P3C.EXE will format the AO-13 telemetry FB. Contact  
w8gus@amsat.org for more info. Meanwhile, Mark sent me another telemetry  
program that I have not had a chance to try yet.

To my knowledge, this DSP-93 modem is the only modem besides the G3RUH  
modem that will properly handshake with P3C.EXE.

73 Frank WB5IPM

### 131. Re: [DSP-93:771] PSK results

From: fperkins@onramp.net  
Date: Tue, 30 May 1995 20:46:08 -0500  
To: dsp-93@tapr.org  
Message-ID: <199505310146.UAA16154@ns.onramp.net>  
Rendered body type: text/plain

Hi Dave,

Finally a YAESU is on-line! OK, on or before this weekend I will tweak the pulse parameters to double the pulse rate for your YAESU. Please stand by!

73 Frank WB5IPM

---

### 132. More on PSK

From: dmedley@indirect.com (David J. Medley)  
Date: Wed, 31 May 1995 00:22:11 -0700  
To: dsp-93@tapr.org  
Message-ID: <199505310722.AAA26816@bud.indirect.com>  
Rendered body type: text/plain

As you suggested Mark, I downloaded psk93r1j.obj and tried again with both LUSAT and PACSAT on the overhead passes tonight. The general performance of this new modem is better than the one I was using before. The behaviour of the LEDs is more positive for one thing. When locked LED 3 remains on all the time as does the CON LED on the TNC. LED 2 flashes presumably as it detects flags and LED 4 flashes with the freq up/down pulses. Quite a nice show but much easier to tune. However at max doppler the pulser still loses it for a short while. But tonight I watched the signal strength as the satellite passed almost directly overhead and there is a definite hole in the antenna pattern when the azimuth is near 90deg. Frank is going to tweak the modem to try and help this problem. In spite of this I remain excited about the performance and tomorrow I will upload some files and note the speeds obtained. According to the PB log data rates have been between 100-150 bps which I think is quite good. We will see how the upload rates show up tomorrow. Have had no need to use high power. 10-15 watts seems adequate. My antenna system is by M squared. This is the second set of this type I have used and I have been impressed with their performance.  
73 de Dave KI6QE

---

### 133. Re: [DSP-93:730] Heatstroke report

From: "Jim Lynch" <k4gvo@atl1.america.net>  
Date: Wed, 31 May 1995 05:49:06 +0000  
To: dsp-93@tapr.org  
Message-ID: <199505311008.KAA17569@america.net>  
Rendered body type: text/plain

Dave,

How's your heat problem coming? My DSP-93 is just sitting here. I haven't been able to make it do anything constructive. I got it for HF and it seems like all the work is on Sats. The hf software I tried did nothing except print funny numbers and the docs seem to suggest I have to be connected to a TNC to make it work. I guess I'm a bit disappointed. Anyway, the thing is just sitting here and I'd be glad to loan it to you for testing. Of course, I'd hope that when you were through, mine didn't suddenly develop a heat problem! hi...

Send me a shipping address and I'll get it to you. Without power supply ok? I suggest the first thing you do is swap one or the other boards intact to see which one it is before popping parts.

Later,

Jim.

|             |                   |             |
|-------------|-------------------|-------------|
| Jim Lynch   | Fayetteville, GA  | K4GVO       |
| '86 GL1200I | k4gvo@america.net | 44.36.34.20 |

---

### 134. Re: [DSP-93:778] Re: Heatstroke report

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 31 May 1995 13:10:23 +0000  
To: dsp-93@tapr.org  
Message-ID: <9505311304.AA10349@camel.campbell.edu>  
Rendered body type: text/plain

Jim,

Dave's HF code is a real gem, partly done (RTTY of all flavors) and partly under construction (AMTOR/SITOR). The beauty of Dave's code is that it does

NOT require a regular TNC for operation.

I have run it on RTTY for up to 24 hours straight with no problems. It is really good at grabbing stuff out of the mud.

You are correct that a majority of the users appear to concentrate on the satellite end. I think that is mainly because of the relative lack of commercial stuff to do it.

Dave's HF code should be "load and go". If your unit is operational, it IS easy to print tons of RTTY. This is, admittedly, not Clover or PacTor. But as more people buy and support the unit (you guys ARE the first builders of the unit), even slicker code will result.

You should be able to load Dave's code (he simple calls it modem.obj) from within D93WE (use the "download menu option") and print the following Canadian RTTY bulletins. Adjust the volume to that LED1 just barely flashes. Then adjust your VFO so that LED5 and LED6 blink back and forth rather evenly. You should be printing! No other buttons need to be pressed to print the Canadian bulletins.

Try these freqs:

6.494.50 USB  
10.534.20 USB  
13.508.20 USB

These are all the same thing. At just about any time of any day I can get one of these freqs. to produce good RTTY. The stations do alternate with WEFAX broadcasts, but you can hear the difference.

I just ran over and printed about 2 pages worth, then it switched to WEFAX.

The other HF mode code that has been released is simply called HFU\_93X.obj. This is Frank's (WB5IPM) "universal hf modem". This is sort of a front end for the dsp-93 to feed another application. There should be a file on your distribution program in dsp93\util called TOR307A.zip. This file contains code that will allow your DSP-93 to run AMTOR. I know, because I have done it. It does work. It is harder to get running than Dave's code, but it does work. I will look at it in the next day or two and see if I can write up a little more on how to make it work.

Does any of this help? If you are having troubles, ask. Some of us have at least tried some of the HF code. Just keep in mind this is all software that has been written and turned over for use by volunteers. Thus the time lag for some things to materialize.

I'd like to see you like your DSP-93.....

>Dave,  
>  
>How's your heat problem coming? My DSP-93 is just sitting here. I  
>haven't been able to make it do anything constructive. I got it for  
>HF and it seems like all the work is on Sats. The hf software I  
>tried did nothing except print funny numbers and the docs seem to  
>suggest I have to be connected to a TNC to make it work. I guess I'm  
>a bit disappointed. Anyway, the thing is just sitting here and I'd  
>be glad to loan it to you for testing. Of course, I'd hope that when  
>you were through, mine didn't suddenly develop a heat problem! hi...  
>  
>Send me a shipping address and I'll get it to you. Without power  
>supply ok? I suggest the first thing you do is swap one or the other  
>boards intact to see which one it is before popping parts.  
>  
>Later,  
>Jim.  
>Jim Lynch                      Fayetteville, GA                      K4GVO  
>'86 GL1200I                      k4gvo@america.net                      44.36.34.20  
>  
>

Mark L. Hammond      [KC4EBR]

---

### 135. Re: [DSP-93:778] Re: Heatstroke report

From: Mills@huey.udel.edu  
Date: Wed, 31 May 95 11:49:28 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org

Message-ID: <9505311149.aa09033@huey.udel.edu>  
Rendered body type: text/plain

Jim,

That's good news. However, if you tried my HF software and it didn't run, maybe you have a new and different problem. See the stuff on louie.udel.edu at the path pub/ntp/modem.zip. I would much appreciate the loan of your unit to

Dave Mills, W3HCF  
43 The Horseshoe  
Newark, DE 19711

I will of course return it pronto after testing and reimburse your postage.

Dave

---

### 136. Re: [DSP-93:768] '95 DCC Proceedings Deadline -Reply

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 31 May 1995 13:50:48 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199505311850.NAA20770@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

Thanks for the note Paul, that address does work as well as the one you mentioned and maty@arrrl.org

So lots of choices.

greg

According to PAUL SHUCH:

>  
>  
>  
>  
> >>> Internet to mweinberg@arrrl.org.  
>  
>  
> Last time I used it, Maty's email address was not mweinberg@ . . . but  
> rather lweinberg@arrrl.org. (her first name is Lori, though she goes by  
> Maty.) 73, Paul n6tx (as some of you know, my first name is Howard,  
> although I go by Paul!)  
>  
>

---

### 137. Re: [DSP-93:777] More on PSK

From: fperkins@onramp.net  
Date: Wed, 31 May 1995 19:30:56 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506010030.TAA05561@ns.onramp.net>  
Rendered body type: text/plain

CQ Dave and the DSP-93 YAESU gang,

Here is psk93r1y.obj to try. Same as psk93r1j.obj, but with the tuning pulse rate doubled.

73 Frank WB5IPM

:18200000FF801008FF801089FF80108FFF801008CE01C808CE07CE031F  
:18201800CE08D00180356002E702FE80128AD00100756002E702FE80E0  
:18203000128AD00140356002E702FE80128AC800CE37CE20D0010020A5  
:182048006004CA006061CE00CE1FD00100036061CE1FD001026360615D  
:18206000CE1FD00100036061CE1FD001244A6061CE1FD0010003606177  
:18207800CE1FD00124486061CE1FCE01D00100106004CA006062606315  
:18209000606460656066606760686069606A606B606C606D606E606FC6  
:1820A80060706071607260736074607560766077607E60786079607A1B  
:1820C000607BCA0A607CD0010090607DD0010190607FC806CA006020E6  
:1820D8006021602260236024602560266027602A602B6029602C602D9D  
:1820F000602E602F6030C800D000007ECA00C806CA00602FE32F85305D  
:18210800C800CE005500FF80108620006060FE801093CE00CE2620617B  
:182120006001CE00CE262072D00504006072E6722C60686F206FD0032A  
:18213800028AF38010A52072D00502006072FF8010A92072D004FDDFF06  
:182150006072206AD0020688006E606AD0034000F28010B3606A296ADE  
:18216800686BD0011306006B586BCC20586C3C6F386BCE146E703C6F0B  
:18218000386CCE146E71CA00A000566356623C64BB983D63ABB1CE1535  
:182198000B706D62CA00A0003C64A02E3D63A05B3D62A02ECE156D7045

:1821B0002070C8066031C800CA00A00056656653C67BB983D66ABB18A  
:1821C800CE150B716D65CA00A0003C67A02E3D66A05B3D65A02ECE1502  
:1821E0006D713C703871CE146E6D56683C69A7D4CE146D68206D00686D  
:1821F8006068CA00A0003C68A7993D69B907CE156C692069606EFE80C6  
:1822100012132070F38011152072D00540006072D00100016070FF80CE  
:18222800111C2072D004BFFF6072D001FFFF60702070D2000398558A00  
:182240006080D10003FE5589A000CA00CB665C90129FCE15607020707B  
:18225800D0030067F480113D2070D0020067F280113DC8082002D00423  
:18227000FF7F6002C800FF801143C8082002D00500806002C800FE80EC  
:1822880011BC207FF380115A8A732073D0040200F580115A207ED0053B  
:1822A0000001607EC8082002D00500406002C800FF801164207ED004B0  
:1822B800FFFE607EC8082002D004FFBF6002C8008A7356742073CE1944  
:1822D000D00440006074F5801174207FF3801177CD01607FFF801177C6  
:1822E800D0010190607F20744C75F680117DCA0060762076D00204FA3E  
:182300006076D0034000F2801186607629766877D0011306007758774F  
:182318002074F68011922077CE2360772277D004FFFC60012072D00472  
:18233000FBFF6072E672C808E702C800EB7EFE8011A2CE26C806D001C3  
:182348000500602FE32F852FCA014E2FF68011BACA00602FE32F85307A  
:182360002030D004005F60302030CD52F58011BAFF800414C800CE2650  
:182378005678CA00A0003C79A7DDCE156D78206E00786078CA00A000CC  
:182390003C78A0343D79A034CE156C79207CD0030001607CF480121277  
:1823A800CA0A607C567ACA00A0003C7BA7DDCE156D7A2079007A607A41  
:1823C000CA00A0003C7AA0343D7BA034CE156C7B207DF48011F4207B0A  
:1823D800CC20F4801212D0010090607DFF801212207D0030001607D3A  
:1823F000D003005DF380120B207ED0050080607EC806202EC800F680EA  
:182408001212207ED0050004607EFF801212207DF3801212207ED004FA  
:18242000FF7B607ECE26206FC8066029C800296AC8066826D0011306D1  
:182438000026CC105826CC2058273C293826CE146E2A3C293827CE14BE  
:182450006E2BCA00A000562156203C22BB983D21ABB1CE150B2A6D2074  
:18246800CA00A0003C22A02E3D21A05B3D20A02ECE156D2ACA00A0005E  
:18248000562456233C25BB983D24ABB1CE150B2B6D23CA00A0003C256C  
:18249800A02E3D24A05B3D23A02ECE156D2B3C2A382BCE146E28562C96  
:1824B000CA00A0003C2DA7DDCE156D2C2028002C602CCA00A0003C2C6F  
:1824C800A0343D2DA034CE156C2D202DC800D002003CF480127D207EAA  
:1824E000D0050040607E2072D004FEFF6072CA01C806602EC800FF804E  
:1824F8001289207ED004FFBF607E2072D00501006072CA00C806602EC3  
:18251000C800CE26C2FFFE801290FE801290CE26C2FFFE801296FE809D  
:182528001296CE26C2FFC3FF558BF901298558AFB901297CE26FFFF62  
:18254000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF9B  
:18255800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF83  
:18257000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF6B  
:18258800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF53  
:1825A000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3B  
:1825B800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF23  
:1825D000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF0B  
:1825E800FFFFFFFFFFFFFFFFFFFFFFFF0001000100010001000100010001DE  
:18260000001000100010001000100010001000000320064009600C800F9CF  
:1826180001290159018801B601E3020E02390262028A02B002D402F746  
:18263000031803360353036E0387039E03B203C403D403E103EC03F52E  
:1826480003FB03FF040003FF03FB03F503EC03E103D403C403B2039EB7  
:182660000387036E03530336031802F702D402B0028A02620239020E01  
:1826780001E301B601880159012900F900C80096006400320000FFCEE8  
:18269000FF9CF6FAFF38FF07FED7FEA7FE78FE4AFE1DFFDF2FDC7FD9E50  
:1826A800FD76FD50FD2CFD09FCE8FCCAFCADFC92FC79FC62FC4EFC3CF5  
:1826C000FC2CFC1FFC14FC0BFC05FC01FC00FC01FC05FC0BFC14FC1F7E  
:1826D800FC2CFC3CFC4EFC62FC79FC92FCADFFCAFC8FD09FD2CFD5010  
:1826F000FD76FD9EFD7FD2FE1DFE4AFE78FEA7FED7FF07FF38FF6A18  
:18270800FF9CFCE00000320064009600C800F901290159018801B6A0  
:1827200001E3020E02390262028A02B002D402F7031803360353036EE6  
:182738000387039E03B203C403D403E103EC03F503FB03FF040003FF3A  
:1827500003FB03F503EC03E103D403C403B2039E0387036E035303362A  
:18276800031802F702D402B0028A02620239020E01E301B60188015904  
:0E278000012900F900C8009600640032000034  
:00000001FF

# June 1995

Original source file: dsp.9506

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/dspsig/mail\\_archive/dsp.9506](http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9506)

## 1. DSP-93 kit shipments

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Thu, 1 Jun 95 09:30:34 BST  
To: dsp-93@tapr.org  
Message-ID: <9506010830.AA19957@getafix.oasis.icl.co.uk>  
Rendered body type: text/plain

Hi, is there any news on the next shipment yet? Last report said it might be shipped by end of May! Am I the only one waiting for this shipment, or is everyone else too polite to ask?  
John Melton g0orx/n6lyt  
g0orx@amsat.org

---

## 2. Re: [DSP-93:780] Re: Heatstroke report

From: "Jim Lynch" <k4gvo@america.net>  
Date: Thu, 1 Jun 1995 05:15:00 +0000  
To: dsp-93@tapr.org  
Message-ID: <199506010925.JAA22952@america.net>  
Rendered body type: text/plain

Hi, Dave,

No I guess I gave up on it before you had developed your rtty software. I think it was Frank's. I'll carry it in today and ship it to you.

Jim.  
Jim Lynch                      Fayetteville, GA              K4GVO  
'86 GL1200I                  k4gvo@america.net          44.36.34.20

---

## 3. Re: [DSP-93:783] DSP-93 kit shipments

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 1 Jun 1995 14:44:34 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506011944.OAA05881@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Hi John -- we are working very hard to get closure on the current kitting efforts. Cathy in Tucson is currently putting the unit in the kits and with luck she should be shipping them to Denton soon. After that we have 6 parts still outstanding and will make a decision then to send them as is and followup with the missing parts when they arrive.

Sorry for the delay -- but I let several parts issues slip in April/May when I got so busy trying to jump through the hoop for my PhD candidacy exams that we now have this problem.

If anyone has speific questions or concrets, please feel free to e-mail me.

Cheers - Greg, WD5IVD

-----  
President -- Tucson Amateur Packet Radio Corp  
-----

According to j.d.melton.slh0613@oasis.icl.co.uk:  
>  
> Hi, is there any news on the next shipment yet? Last report  
> said it might be shipped by end of May! Am I the only one  
> waiting for this shipment, or is everyone else too polite to  
> ask?  
> John Melton g0orx/n6lyt  
> g0orx@amsat.org  
>

---

## 4. PSK and Yaesu

From: dmedley@indirect.com (David J. Medley)  
Date: Thu, 1 Jun 1995 13:10:57 -0700  
To: DSP-93@tapr.org



Message-ID: <199506012010.NAA10066@bud.indirect.com>  
Rendered body type: text/plain

Frank I tried your DSP-9378 Modem on both PACSAT and LUSAT overhead passes this morning and it worked just perfectly. Hard lock for the whole pass with excellent data rates both up and down. This modem also seems a lot easier to tune in and the LEDs are very positive. I will now write up exactly what I have done and how I work the system and post it on the tapr.org server. Will be early next week. In the meanwhile guys try these old birds. They are very lonely and not getting much attention. No uplink contention and you can always get into the PB queue first time.  
73 de Dave

---

## 5. Re: [DSP-93:786] PSK and Yaesu

From: fperkins@onramp.net  
Date: Thu, 1 Jun 1995 19:50:07 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506020050.TAA13894@ns.onramp.net>  
Rendered body type: text/plain

Hi Dave,

Thanks for ringing out the YAESU version of the PSK modem. In the near future I'll spin up the YAESU version for radio port 2.

73 Frank WB5IPM

---

## 6. PSK "Yaeasu" version?

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 02 Jun 1995 03:02:01 +0000  
To: dsp-93@tapr.org  
Message-ID: <9506020256.AA20482@camel.campbell.edu>  
Rendered body type: text/plain

Great job on getting the Yaeasu going with the DSP-93, Dave! And of course Frank for yet another piece of art....

But if I may be so bold....

While this version of the code \*does\* work with Dave's setup, I think we should be careful about calling this the "Yaeasu" version. If I have been following this correctly, he is using a version of the code that still has the up/down mic clicks backwards from what the 736R rig actually wants. Isn't that what the relays you mentioned are doing? Sort of reversing the logic of the mic pulses?

If we "market" this code as the "Yaeasu version", we need to do some VERY good documentation/notation about what is needed to make it work. Otherwise, we will hear lots about the "Yaeasu version" not working on the the Yaeasu radios....

Am I right? Isn't the new code just a "mic-click speeded up" version that works with the ICOM and Kenwood rigs?

Just my 2 cents worth (okay, maybe a nickle :)

>Hi Dave,  
>  
>Thanks for ringing out the YAESU version of the PSK modem. In the near  
>future I'll spin up the YAESU version for radio port 2.  
>  
>73 Frank WB5IPM  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 7. Re: [DSP-93:787] Re: PSK and Yaesu

From: w6shp@amsat.org (Howard Sodja)  
Date: Thu, 01 Jun 1995 23:24:19 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506020624.XAA05069@hopf.dnai.com>  
Rendered body type: text/plain

>Hi Dave,  
>

>Thanks for ringing out the YAESU version of the PSK modem. In the near  
>future I'll spin up the YAESU version for radio port 2.  
>  
>73 Frank WB5IPM  
>  
I agree with Mark, this is ALMOST a Yaesu version, but I do not think it can  
be truly a Yaesu version until we get the mic click correct. I personally  
will not build Dave's relay interface because I want to use the DSP-93 as it  
should be used, with software replacing hardware. I'll keep using my TAPR  
PSK modem until either I can figure out how to change the code, or someone  
else does it.

I got the TI books on the TSM320C2x books Ron recommended, but I will need  
some time to try to understand it all. I gave them a quick scan and realize  
a lot of study will be needed for me. I saw another book recommended to  
Dave, but do not know where to find it. Perhaps if someone can get it we  
can do a group purchase, if the book is more of a "beginners" assembly book  
for the TSM320C25. So it will be a while before I am able to hack a Yaesu  
mic click version.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 8. PSK and Yaesu

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 02 Jun 1995 17:56:19 +0000  
To: dsp-93@tapr.org  
Message-ID: <9506021748.AA01188@camel.campbell.edu>  
Rendered body type: text/plain

Howard,

I think Ron has tried to lead you down the right path for hacking out a  
Yaesu version.

There is a program called "testport.asm" that does mic clicks for Kenwoods,  
etc. Then there is the version Ron modified for the Yaesu rigs called  
"testpory.asm". Use something to do a file compare between the two  
programs, and look for the code that has been changed. Then take a peak in  
the psk code for something that looks very similar to the testport.asm mic  
click code. Then go from there.

Does that make any sense?

>for the TSM320C25. So it will be a while before I am able to hack a Yaesu  
>mic click version.  
>  
>73  
>Howard Sodja, W6SHP In the SF Bay area

Mark L. Hammond [KC4EBR]

---

## 9. help

From: matem@ipv36.unipv.it (dip. Matematica- Rossella)  
Date: Fri, 2 Jun 1995 22:20:25 +0200  
To: dsp-93@tapr.org  
Message-ID: <9506022020.AA16854@unipv.it>  
Rendered body type: text/plain

Hi gang

I am returned on internet after a work absence. After the change of TLC32044 all  
is running fine. Any new soft was released in the last month?  
Another question. I tried to enter on amsat ftp side how anonymous, but the answer  
is: "login incorrect". Any suggestion?  
Tnx in advance Franco IN3DYG

---

## 10. Re: [DSP-93:791] help

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 2 Jun 1995 16:51:58 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01abf537d2591d@[204.181.160.77]>  
Rendered body type: text/plain

>Hi gang  
>I am returned on internet after a work absence.After the change of TLC32044 all  
>is running fine.Any new soft was released in the last month?  
>Another question.I tried to enter on amsat ftp.side how anonymous,but the  
>answer  
>is : "login incorrect".Any suggestion?  
>Tnx in advance      Franco    IN3DYG

Glad to hear the news.

The following should work:

ftp to "ftp.amsat.org"

login: anonymous  
password: Use your e-mail address.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 11. Re: [DSP-93:791] help

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 02 Jun 1995 23:26:53 +0000  
To: dsp-93@tapr.org  
Message-ID: <9506022318.AA02697@camel.campbell.edu>  
Rendered body type: text/plain

Franco,

Be sure to get the new version of DSPLOAD.EXE from the upload directory. It is dated May 27. Replace your older versions with this new one.

Welcome back!

>Hi gang  
>I am returned on internet after a work absence.After the change of TLC32044 all  
>is running fine.Any new soft was released in the last month?  
>Another question.I tried to enter on amsat ftp.side how anonymous,but the  
>answer  
>is : "login incorrect".Any suggestion?  
>Tnx in advance      Franco    IN3DYG  
>  
>

Mark L. Hammond    [KC4EBR]

---

## 12. PSK and the 736

From: dmedley@indirect.com (David J. Medley)  
Date: Fri, 2 Jun 1995 19:50:59 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506030250.TAA23677@bud.indirect.com>  
Rendered body type: text/plain

Well Guys I must put in my 1 cents worth here. Let me begin by saying that the DSP-93 and my FT-736 are performing with LUSAT and PACSAT with substantially better and more stable results than I ever had with the many TAPR PSKs which have passed through my hands. The whole Yaesu project here cost two 99c relays, some plastic tape and maybe 20 minutes of work. Well if someone out there wants to reinvent the wheel for the sake of purism be my guest. As for me I am now going to look for other fields to conquer with my DSP-93 and will continue to enjoy my setup with the microsats. Incidentally as I understand it the software solution that appears to be so desired is a non trivial project.  
73 de Dave

---

## 13. Re: [DSP-93:794] PSK and the 736

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 3 Jun 1995 06:53:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00abf5fc7a8d70@[204.181.160.77]>  
Rendered body type: text/plain

>Well Guys I must put in my 1 cents worth here. Let me begin by saying that  
>the DSP-93 and my FT-736 are performing with LUSAT and PACSAT with  
>substantially  
>better and more stable results than I ever had with the many TAPR PSKs which  
>have passed through my hands. The whole Yaesu project here cost two 99c relays,  
>some plastic tape and maybe 20 minutes of work. Well if someone out there wants  
>to reinvent the wheel for the sake of purism be my guest. As for me I am now  
>going to look for other fields to conquer with my DSP-93 and will continue to  
>enjoy my setup with the microsats.  
>Incidentally as I understand it the software solution that appears to be so  
>desired is a non trivial project.  
>73 de Dave

With regard to the last comment, I think you overestimate the complexity of  
the Yaesu conversion. In fact, it would be a good project to get you feet  
wet on.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 14. TAPR DSP93 + WISP + PK900

From: Bob Smith <rsmith@internetMCI.COM>  
Date: Sat, 03 Jun 1995 08:41:11 -0500  
To: "dsp-93@tapr.org" <dsp-93@tapr.org>  
Message-ID: <01HR9HI1ZSCY9854F5@MAILSRV1.PCY.MCI.NET>  
Rendered body type: text/plain  
-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --

TAPR DSP93 + WISP + PK900

Anyone use the above combination? Any thoughts you could share  
would be most appreciated. Thanks

```
[0]~-----[0]
| Bob Smith N3FTU |
| rsmith@internetMCI.COM Atlanta, GA |
[0]~-----[0]
```

---

## 15. TAPR DSP93 + WISP + PK900

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sat, 03 Jun 1995 13:14:15 +0000  
To: dsp-93@tapr.org  
Message-ID: <9506031307.AA04081@camel.campbell.edu>  
Rendered body type: text/plain

Bob,

My \*thoughts\* are that it should work just dandy! I don't think anybody has  
mentioned trying the pk900 yet.

Does the PK900 have a standard TNC2 modem disconnect header? (a 2x10 pin  
header, might have some jumpers on it?). If it does, you should easily be  
able to interface it. If not, the hookup might be challenging.

I have used WISP + PK232+ DSP93 and WISP + MFJ-1270C + DSP93 successfully.

Let us know of your successes (or hurdles).

```
>-- [From: Bob Smith * EMC.Ver #b.2.5.02] --
>
>TAPR DSP93 + WISP + PK900
>
>Anyone use the above combination? Any thoughts you could share
>would be most appreciated. Thanks
>
> [0]~-----[0]
> | Bob Smith N3FTU |
> | rsmith@internetMCI.COM Atlanta, GA |
> [0]~-----[0]
>
>
>
```

## 16. Re: [DSP-93:797] TAPR DSP93 + WISP + PK900

From: "Jim Lynch" <k4gvo@america.net>  
 Date: Sun, 4 Jun 1995 09:12:11 +0000  
 To: hammond@camel.campbell.edu (Mark L. Hammond), dsp-93@tapr.org  
 Message-ID: <199506041323.NAA09947@america.net>  
 Rendered body type: text/plain

```
> Date: Sat, 3 Jun 1995 08:19:29 -0500
> Reply-to: dsp-93@tapr.org
> From: hammond@camel.campbell.edu (Mark L. Hammond)
> To: dsp-93@tapr.org
> Subject: [DSP-93:797] TAPR DSP93 + WISP + PK900

> Bob,
>
> My *thoughts* are that it should work just dandy! I don't think anybody has
> mentioned trying the pk900 yet.
>
> Does the PK900 have a standard TNC2 modem disconnect header? (a 2x10 pin
> header, might have some jumpers on it?). If it does, you should easily be
> able to interface it. If not, the hookup might be challenging.
>
> I have used WISP + PK232+ DSP93 and WISP + MFJ-1270C + DSP93 successfully.
>
> Let us know of your successes (or hurdles).
>
```

Mark et al.

The PK-232 has a 26 pin (2 x 13) header inside with jumpers on  
 1-2 5-6 13-14 17-18 19-20

The manual shows this as a modem disconnect header, but I can't find  
 any other references to this header. The manual is a superset of the  
 PK-232 manual but does not have an index, so the header may be  
 discussed, but I can't find it.

A few pins that I can quickly figure out their function:

```
2 DCD line from uart
3 4 7 8 9 10 16 21 22 24 No connection
26 +12
25 15 Ground
13 clks (that's a label, I don't know where from, though)
11 32X (another label)
5 RTS
19 TXD
17 RXD
```

Does this relate to the TAPR standard at all? A problem in  
 connecting to this header is that there is no provision for an  
 external connection. One will have to drill/cut a hole in the back  
 panel to run a wire.

Jim.

```
>
> >-- [From: Bob Smith * EMC.Ver #b.2.5.02] --
> >
> >TAPR DSP93 + WISP + PK900
> >
> >Anyone use the above combination? Any thoughts you could share
> >would be most appreciated. Thanks
> >
```

```
> > [0]~~~~~[0]
> > | Bob Smith N3FTU |
> > | rsmith@internetMCI.COM Atlanta, GA |
> > [0]~~~~~[0]
```

```
> >
> >
> >
> >
>
```

> Mark L. Hammond [KC4EBR]

>

>

```
Jim Lynch Fayetteville, GA K4GVO
'86 GL1200I k4gvo@america.net 44.36.34.20
```

## 17. more on the pk900

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sun, 04 Jun 1995 20:27:29 +0000  
To: dsp-93@tapr.org  
Message-ID: <9506042021.AA07121@camel.campbell.edu>  
Rendered body type: text/plain

Hi Jim,

My \*pk232\* has no such header from the factory (mine is from about 1988). I had to use the "TAPR modem disconnect header kit".

Did you mean the PK-900 in the sentence below?

VVVVVV  
>The PK-232 has a 26 pin (2 x 13) header inside with jumpers on  
>1-2 5-6 13-14 17-18 19-20

If you have your DSP-93 assembly manual, check out page 32 of 33. This is a picture of the TNC-2 modem disconnect header. It looks \*very\* promising that AEA used pins 1-20 of their 26 pin connector to exactly correlate with the standard TNC-2 header (assuming that is what you pinning out below).

PLEASE, Bob, if you or Jim pursue this, check out these lines in more detail before you connect this up. But it does sound like a 5 wire cable from this PK-900 header will connect to the DSP-93 just dandy. Of course, you will have to check continuity on the actual header to see if they are connected by traces as well as jumpers, and make sure all the pins for PTT are all connected together, etc.

Bob, I'll bet you are in business with the pk900 and the dsp-93!

>The manual shows this as a modem disconnect header, but I can't find  
>any other references to this header. The manual is a superset of the  
>PK-232 manual but does not have an index, so the header may be  
>discussed, but I can't find it.  
>A few pins that I can quickly figure out their function:  
>2 DCD line from uart  
>3 4 7 8 9 10 16 21 22 24 No connection  
>26 +12  
>25 15 Ground  
>13 clks (that's a label, I don't know where from, though)  
>11 32X (another label  
>5 RTS  
>19 TXD  
>17 RXD  
>  
>Does this relate to the TAPR standard at all? A problem in  
>connecting to this header is that there is no provision for an  
>external connection. One will have to drill/cut a hole in the back  
>panel to run a wire.  
>  
>Jim.

Another reason why the TNC-95 is good idea =)

Mark L. Hammond [KC4EBR]

---

## 18. oh, a little trick

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sun, 04 Jun 1995 20:36:06 +0000  
To: dsp-93@tapr.org  
Message-ID: <9506042029.AA07134@camel.campbell.edu>  
Rendered body type: text/plain

Jim,

I forgot to mention a little trick I used on the MFJ-1270C. To get the modem disconnect lines out of the TNC, I used the TTL header/pins on the back panel. I cut the traces to the pins, and wired up the 5 lines from the modem disconnect header thru the connector instead. This lets me run a cable from the DSP-93 to the MFJ without having to drill any holes. MFJ even includes the mating connector with the TNC. I used it.

The traces are easily bridged in the event I ever need to use them for their intended purpose (basically, hookup to a Commodore.....ugh!)

My PK232 has an EXT MODEM connector on the back panel with 5 pins. One could do the same little trick here, too. Maybe the pk900 has an unused EXT

MODEM connector, too? I'll bet one of the lines is even ground....already done for you!

Just a thought...

Mark L. Hammond [KC4EBR]

---

## 19. Re: [DSP-93:799] more on the pk900

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Sun, 04 Jun 95 17:48:41 UTC  
To: dsp-93@tapr.org  
Message-ID: <4554@paccomm.com>  
Rendered body type: text/plain

Re: 26 pin modem accessory header

TAPR defined the 20 pin 'modem disconnect' header on the TNC-2. It allowed an auxiliary modem to be used in place of the on-board modem, but did not provide transmit/recieve audio routing or power. (The power being self-supplied was a good idea with the TNC-2, especially on the negative voltage side).

In 1989 PacComm expanded the 20 pin definition to 26 pins. No changes were made to the original 20 pin definitions. The additional pins brought power and audio signals to the auxiliary modem and modulated audio back to the main board.

Lyle Johnson said this was a 'good idea' and adopted the 26 pin version as a TAPR standard.

Here is how PacComm defines the pins 21-26:

- 21 - Audio output of the TNC modem (normally jumpered to 22)
- 22 - Audio from aux modem (or from pin 21) to the TNC radio connector.
- 23 - Regulated +5VDC
- 24 - Received audio from TNC radio connector (in parallel with TNC modem)
- 25 - Power Ground
- 26 - Unregulated +12VDC (direct tap to TNC input power)

We didn't do anything about negative voltage either.

We later wished for one or more control signals but didn't want to expand the definition again. Some of our modems will accept a control signal on pin 16 which was not otherwise too useful.

It is good to see AEA returning to putting proper modem accessory headers on some of their products. We have attempted to attach our PSK-1 accessory modem to many different TNCs, and it is a real pain if the right signals aren't readily available.

One more - On AEA 8530 products, they put a 32x clock on pin 12. The TNC-2 puts a 16x clock there and therefore most aux modems are looking for 16x. The second generation and later external 9600 modems have the ability to divide that input clock by 2 to be compatible with the AEA products.

-----  
Gwyn Reedy, W1BEL      gwyn@paccomm.com      W1BEL@amsat.org  
  
+(813) 874-2980      Fax:+(813) 872-8696      BBS: +(813) 874-3078 (V.34)  
  
PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

---

## 20. Re: [DSP-93:780] Re: Heatstroke report

From: fperkins@onramp.net  
Date: Sun, 4 Jun 1995 18:51:49 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506042351.SAA16120@ns.onramp.net>  
Rendered body type: text/plain

CQ Dave W3HCF,

I have been video taping the DSP-93 HF modes today for a our session at Ham Com next weekend. I dug out my old, old HF rig and repaired my 20 m I-Vee. Well, I cranked up you RTTY modem and it is hot! While taping the signal faded right into the noise for several seconds and the modem never missed a character.

Nice work.

## 21. hot\_hf93

From: hammond@camel.campbell.edu (Mark L. Hammond)  
 Date: Mon, 05 Jun 1995 01:05:49 +0000  
 To: dsp-93@tapr.org  
 Message-ID: <9506050059.AA07725@camel.campbell.edu>  
 Rendered body type: text/plain

See why I insisted on naming it "hot\_hf93.obj" for distribution?

;-)

>CQ Dave W3HCF,

>

>I have been video taping the DSP-93 HF modes today for a our session at  
 >Ham Com next weekend. I dug out my old, old HF rig and repaired my 20 m  
 >I-Vee. Well, I cranked up you RTTY modem and it is hot! While taping the  
 >signal faded right into the noise for several seconds and the modem  
 >never missed a character.

>

>Nice work.

>

>73 Frank WB5IPM

>

>

>

Mark L. Hammond [KC4EBR]

## 22. Re: [DSP-93:801] Re: more on the pk900

From: Greg Jones <gjones@tenet.edu>  
 Date: Sun, 4 Jun 1995 21:42:05 -0500 (CDT)  
 To: dsp-93@tapr.org  
 Message-ID: <199506050242.VAA20127@Leslie-Francis.tenet.edu>  
 Rendered body type: text/plain

TAPR began using a 26 pin header when the new TAPR 9600 baud modem was released. Not sure where/when Lyle came up with it. I thought I would post this as a followup to Gwynn posting. Will also be putting this file in the ftp area....shouldl be aref around someplace.

I am including the header for the 26 pin header and 20 pin header

Modem Disconnect - P3 (9600 baud modem)

The modem disconnect is used to connect the 9600 bps modem to the attached TNC. It may be wired as a 20- or 26-pin connector. If wired as a 20-pin connector, pins 21-26 are not used. Note that many signals available at the header are not used by the modem but are provided for use by the TNC. Signals that are absolutely necessary for modem operation are marked with an asterisk (like this\*).

| Pin | Name    | Function                                                                                                                                                                                                   |
|-----|---------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1*  | DCD Out | Data Carrier Detect output from modem to TNC. A logic low indicates DCD.                                                                                                                                   |
| 2   | DCD In  | Data Carrier Detect input from TNC's modem. This signal is passed to pin 1 when the 9600 bps modem is not selected.                                                                                        |
| 3   | N/C     | Not connected.                                                                                                                                                                                             |
| 4   | N/C     | Not connected.                                                                                                                                                                                             |
| 5*  | RTS In  | Request to Send input from TNC. A logic low tells the modem to transmit.                                                                                                                                   |
| 6   | RTS Out | Request to Send output to TNC's modem. When the 9600 bps modem is not selected, pin 5's level is passed to this pin.                                                                                       |
| 7   | N/C     | Not used. Routed to JP5.                                                                                                                                                                                   |
| 8   | N/C     | Not used. Routed to JP5.                                                                                                                                                                                   |
| 9   | N/C     | Not used. Routed to JP4.                                                                                                                                                                                   |
| 10  | N/C     | Not used. Routed to JP4.                                                                                                                                                                                   |
| 11  | TXC Out | Transmit Clock output to TNC. This square wave is at 32x or 16x the data rate depending on the status of JP3.                                                                                              |
| 12* | TXC In  | Transmit Clock input from TNC. This signal is expected at 16x or 32x the data rate depending on the status of JP3. If the TNC does not provide this clock, it may be provided locally by the Clock Option. |
| 13  | RXC Out | Receive Clock output to TNC. This is not used by the modem and is a 32x or 1x clock depending on the state of JP3.                                                                                         |
| 14  | RXC In  | Receive Clock input from TNC.                                                                                                                                                                              |
| 15* | GND     | Power and signal common.                                                                                                                                                                                   |
| 16  | N/C     | Not used.                                                                                                                                                                                                  |



17\* RXD Out Receive Data from the 9600 bps modem.  
 18 RXD In Receive Data from the TNC's modem. This signal is routed to  
 pin 17 when the 9600 bps modem is not selected.  
 19\* TXD In Transmit Data from the TNC.  
 20 TXD Out Transmit Data to the TNC's modem.  
 This pin is always shorted to pin 19.  
 21 N/C Not used.  
 22 N/C Not used.  
 23 +5V +5V power. This is an input and should only be used if modem  
 regulator U23 is not installed.  
 Current drain is about 50 mA.  
 24 N/C Not used.  
 25 GND Power and signal common.  
 26\* +12V +12V unregulated power in. This voltage should be in the range of  
 +8 to +20 VDC and capable of supplying at least 50 mA.  
 This signal is not needed if regulated  
 +5 VDC is instead supplied to pin 23.

=====

#### TAPR 20 pin modem disconnect

| Pin | Name    | Function                                                                                                                                                                |
|-----|---------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1*  | DCD In  | Data Carrier Detect output from 9600 bps modem.<br>A logic low indicates DCD.<br>This signal must be passed to pin 2 when the attached<br>external modem is not in use. |
| 2*  | DCD Out | Data Carrier Detect output from the attached external modem.<br>This pin must reflect the state of pin 1 when the external<br>modem is not in use.                      |
| 3   | N/C     | Not connected.                                                                                                                                                          |
| 4   | N/C     | Not used.                                                                                                                                                               |
| 5*  | RTS Out | Request to Send input to the 9600 bps modem.<br>The signal at this pin must reflect<br>pin 6 when the external modem is not in use.                                     |
| 6*  | RTS In  | Request to Send input from the TNC to the attached external modem                                                                                                       |
| 7   | N/C     | Not used. Shorted to pin 8.                                                                                                                                             |
| 8   | N/C     | Not used. Shorted to pin 7.                                                                                                                                             |
| 9   | N/C     | Not used. Shorted to pin 10.                                                                                                                                            |
| 10  | N/C     | Not used. Shorted to pin 9.                                                                                                                                             |
| 11* | TXC Out | Transmit Clock output to TNC. This square wave is at 32x or<br>16x the data rate.<br>It must be passed to pin 12 when the attached external modem<br>is not in use.     |
| 12* | TXC In  | Transmit Clock input from TNC. This signal is at 16x or 32x<br>the data rate.                                                                                           |
| 13* | RXC Out | Receive Clock output to TNC. This signal is at 32x or 1x the<br>data rate. It must be passed to pin 14 when the attached<br>external modem is not in use.               |
| 14* | RXC In  | Receive Clock input from TNC.                                                                                                                                           |
| 15* | GND     | Power and signal common.                                                                                                                                                |
| 16  | N/C     | Not used.                                                                                                                                                               |
| 17* | RXD In  | Receive Data from the 9600 bps modem to the TNC.<br>This signal must be passed to<br>pin 18 when the attached external modem is not in use.                             |
| 18* | RXD Out | Receive Data from the attached external modem.<br>This pin must reflect the state of<br>pin 17 when the attached external modem is not in use.                          |
| 19* | TXD In  | Transmit Data from the TNC. This pin should remain shorted<br>to pin 20 at all times.                                                                                   |
| 20* | TXD Out | Transmit Data to the TNC's modem. This pin should always be<br>shorted to pin 19.                                                                                       |

The connector pin-outs are as follows:

#### Pin 1 Carrier Detect Input

This pin tells the SCC radio port that a valid data carrier has been detected. It should be pulled high when no carrier is detected. It should be pulled high when no carrier is detected and low when a carrier is present. This line is normally jumpered to pin 2 when the host TNC modem is used.

#### Pin 2 Carrier Detect Output

This pin is an output from the on-board modem and satisfies the requirements outlined for pin 1 above. It is jumpered to pin 1 when the host TNC modem is used.

Pin 3 No Connection  
Pin 4 No Connection

Pin 5 SCC RTS Output

This signal is used for transmitter activation. The SCC will pull this output low when the TNC wants to transmit; otherwise it will remain high. This pin is normally jumpered to pin 6 when the host TNC modem is used.

Pin 6 Transmit Key Input

This signal is an input to the host TNC modem. It activates the PTT pin of the radio connector via the watch-dog timer. It should be left high and pulled low only when transmission is desired. This pin is normally jumpered to pin 5 when the host TNC modem is used.

Pin 7 No Connection  
Pin 8 No Connection  
Pin 9 No Connection  
Pin 10 No Connection

Pin 11 Data Rate Clock (32x) Output

This pin is tied to the SCC baud rate generator output. It operates at 32 times the desired radio port data rate, e.g., 38.4 kHz for 1200 baud. In TAPR TNCs this is a transmit clock. In the PK-232, this signal drives the receive DPLL. It also drives an external divide-by-32 IC (U8) to provide a transmit clock at the data rate, or 1200Hz for 1200bps. This pin is tied to pin 12 when using the PK-232Us modem.

Pin 12 No Connection

Pin 13 Data Rate Clock (1x) Input

This pin is the SCC transmit clock input pin. It expects a clock at the desired data rate (1200 Hz for 120 baud). This pin is tied to pin 14 when using the internal modem.

Pin 14 Data Rate Clock (1x) Output

This pin is transmit data clock signal. It is normally jumpered to pin 13 when the host TNC modem is used. It connects to the output of the divide-by-32 circuit on the T232 main board.

Pin 15 Upgrade Ground Reference

This pin ties to the TNC digital ground system.

Pin 16 No Connection

Pin 17 Receive Data Input

This pin is received data input to the SCC. This pin is normally jumpered to pin 18 when the host TNC modem is used.

Pin 18 Receive Data Output

This pin provides receive data from the host TNC modem. This pin is normally jumpered to pin 17 when the host TNC modem is used.

Pin 19 Transmit Data Output

This line is the SCC data output. This pin is normally jumpered to pin 20 when the host TNC modem is used.

Pin 20 Transmit Data Input

This input line accepts data to be transmitted by the modem. This pin is normally jumpered to pin 19 when the host TNC modem is used.

---

## 23. Re: [DSP-93:801] Re: more on the pk900

From: bstrick@plano.net (Bob Stricklin)  
Date: Sun, 4 Jun 1995 22:32:23 -0500  
To: dsp-93@tapr.org  
Message-ID: <9506050332.AA13535@dns>  
Rendered body type: text/plain

Thanks for your comments Gwyn. You and Lyle are correct it was a good idea to expand the port. I did not realize you had done this or I would have used a 26 pin header on the DSP-93. If I could have squeezed it in.

We have already needed the +5 for a pull up and changed the use of some of the other pins. All of the lines are there though if someone wants to use the original 20 pin interface.

Bob Stricklin, N5BRG

## 24. Re: [DSP-93:790] PSK and Yaesu

From: w6shp@amsat.org (Howard Sodja)  
Date: Sun, 04 Jun 1995 20:31:25 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506050331.UAA08344@hopf.dnai.com>  
Rendered body type: text/plain

>Howard,  
>  
>I think Ron has tried to lead you down the right path for hacking out a  
>Yaesu version.  
>  
>There is a program called "testport.asm" that does mic clicks for Kenwoods,  
>etc. Then there is the version Ron modified for the Yaesu rigs called  
>"testpory.asm". Use something to do a file compare between the two  
>programs, and look for the code that has been changed. Then take a peak in  
>the psk code for something that looks very similar to the testport.asm mic  
>click code. Then go from there.  
>  
>Does that make any sense?  
>Howard,  
>  
>I think Ron has tried to lead you down the right path for hacking out a  
>Yaesu version.  
>  
>There is a program called "testport.asm" that does mic clicks for Kenwoods,  
>etc. Then there is the version Ron modified for the Yaesu rigs called  
>"testpory.asm". Use something to do a file compare between the two  
>programs, and look for the code that has been changed. Then take a peak in  
>the psk code for something that looks very similar to the testport.asm mic  
>click code. Then go from there.  
>  
>Does that make any sense?

Hello Mark,

Yes, I first thought I could hack a Yaesu version by simply comparing testport.asm and testpory.asm and to a simple "find/replace" on the psk.asm file. But in examining these programs and psk.obj I realized I had no idea what I was looking at. I isolated the mic-click routine. But it might as well be hex code as far as my understanding it. That is when I asked Ron for the DSP book information.

I got Texas Instrument's TMS320C2x User's Guide and Linear Circuits Data Conversion, DSP Analog Interface, and Video Interface Data Book, volume 2. TI sent me both books for free. All I need to know is there, but together these books are 2 3/4 inches thick! So I will need some time to digest all this info.

Someone mentioned the book "Digital Signal Processing with the TMS320C25", published by WILEY. I was hoping this might be a more basic "how to" book not written for engineers, like the TI books are. My only previous experience at assembly programming was with my old Apple IIe, and it was only because of a very basic "Assembly programming for beginners" book that was written for hobbyists and not engineers. If the above book is along these lines perhaps we could do a group purchase for those of us who want to wet our feet. If it is at the same level as the two TI books I already have, then I will just have to wade through them when I have the time. I know all I need is in these books, but it is a bit overwhelming for me.

Time is the real problem. Like Dave, I want to play with some other DSP-93 modes before I tackle the PSK code, as I have so far only copied 9600 baud FSK with my DSP-93. As I am already on PSK with my TAPR PSK modem, I will return to this PSK code problem after I play with the other modes first.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 25. Re: [DSP-93:802] Re: Heatstroke report

From: Mills@huey.udel.edu  
Date: Sun, 4 Jun 95 23:45:35 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9506042345.aa25947@huey.udel.edu>  
Rendered body type: text/plain

Frank,

Thanks for the kind words. I have just updated the distribution with some minor bugfixes, improved autostart and added SITOR/AMTOR Mode B (FEC) support. It's on host louie.udel.edu at pbu/ntp/modem.zip and pub/ntp/modem.tar.Z. However, while watching it eat the multipath on W1AW bulletins this evening, I have concluded the PLLs (on for Baudot synchronous mode, the other for SITOR) need some work. The Baudot synchronous mode PLL works fine at 75 baud, but won't hold lock at 45.45 baud. The SITOR PLL time constants are too short. Surely I have forgotten my premier rule for PLL design, carefully determined the loop gain operating in unlock condition, then really and truly believe the equations. I haven't done all my homework yet.

You will like the SITOR design; the influences of my youth when I worked at COMSAT Labs and Linkabit (ancestor of Qualcomm) spring readily to hand.

Dave

---

## 26. Re: [DSP-93:806] Re: PSK and Yaesu

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 5 Jun 1995 07:34:02 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01abf8a9007887@[204.181.160.75]>  
Rendered body type: text/plain

Howard,

>Yes, I first thought I could hack a Yaesu version by simply comparing  
>testport.asm and testpory.asm and to a simple "find/replace" on the psk.asm  
>file. But in examining these programs and psk.obj I realized I had no idea  
>what I was looking at. I isolated the mic-click routine. But it might as  
>well be hex code as far as my understanding it. That is when I asked Ron for  
>the DSP book information.

The most important place to look, you have had all the time. Look at the port definitions in the file MONITOR.DOC on the DSP diskettes.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 27. Re: [DSP-93:807] Re: Heatstroke report

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 5 Jun 1995 07:34:06 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02abf8a9739396@[204.181.160.75]>  
Rendered body type: text/plain

Dave,

>Thanks for the kind words. I have just updated the distribution with  
>some minor bugfixes, improved autostart and added SITOR/AMTOR Mode B  
>(FEC) support. It's on host louie.udel.edu at pbu/ntp/modem.zip and  
>pub/ntp/modem.tar.Z.

Why don't you use ftp.tapr.org for your uploads so all DSP-93 stuff is together.

For now, use /tapr/dsp93/upload but Mark can set up a directory for you when he has time.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 28. Re: [DSP-93:807] Re: Heatstroke report

From: Kohjin Yamada <kohjin@cosmos.marina.prug.or.jp>  
Date: Mon, 05 Jun 1995 21:13:19 +0900  
To: dsp-93@tapr.org  
Message-ID: <199506051213.VAA14237@cosmos.marina.prug.or.jp>  
Rendered body type: text/plain

73's,  
--kohjin JR1EDE

```
-- [From: Bob Smith * EMC.Ver #b.2.5.02] --
```

```
[0] ~~~~~ [0]
| Bob Smith N3FTU |
| rsmith@internetMCI.COM Atlanta, GA |
[0] ~~~~~ [0]
```

Ron,

I can do that.

Dave

---

### 32. Re: [DSP-93:810] Re: Heatstroke report

From: Mills@huey.udel.edu  
Date: Mon, 5 Jun 95 16:16:01 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9506051616.aa28822@huey.udel.edu>  
Rendered body type: text/plain

Kohjin,

I'd be glad to do that; however, I've been spanked on other software distributions when using programs not included in the base operating system distributed with ordinary workstations. The tar.Z file is for that community. I would think about anybody would use the .zip file, which was compressed directly on my PC.

Dave

---

### 33. Re: [DSP-93:807] Re: Heatstroke report

From: fperkins@onramp.net  
Date: Mon, 5 Jun 1995 18:33:27 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506052333.SAA06201@ns.onramp.net>  
Rendered body type: text/plain

Hi Dave,

I will pull a copy of the latest version this week. I'll try to get some video of the other modes in time for Ham Com.

73 Frank WB5IPM

---

### 34. Re: [DSP-93:809] Re: Heatstroke report

From: fperkins@onramp.net  
Date: Mon, 5 Jun 1995 18:42:42 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506052342.SAA07102@ns.onramp.net>  
Rendered body type: text/plain

Hi Gang,

I just pulled a copy of Dave's latest modem rev from louie. ... real fast ftp site ... one of the few places I get my monies worth out of this 28.8 modem.

73 Frank WB5IPM

PS who is coming to Ham Com this weekend?

---

### 35. Re: [DSP-93:816] Re: Heatstroke report

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 5 Jun 1995 20:24:02 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506060124.UAA15765@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

I'll be there with bells on!

Greg

According to fperkins@onramp.net:

>  
> Hi Gang,  
>  
> I just pulled a copy of Dave's latest modem rev from louie. ... real fast  
> ftp site ... one of the few places I get my monies worth out of this 28.8  
> modem.  
>  
> 73 Frank WB5IPM  
>  
> PS who is coming to Ham Com this weekend?  
>  
>

---

### 36. location of Ham Com?

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 06 Jun 1995 01:51:14 +0000  
To: dsp-93@tapr.org  
Message-ID: <9506060143.AA01277@camel.campbell.edu>  
Rendered body type: text/plain

Guys,

Where is Ham Com being held?

>I'll be there with bells on!  
>  
>Greg  
>  
>> 73 Frank WB5IPM  
>>  
>> PS who is coming to Ham Com this weekend?  
>>  
>>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

### 37. Re: [DSP-93:815] Re: Heatstroke report

From: fperkins@onramp.net  
Date: Mon, 5 Jun 1995 20:56:38 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506060156.UAA19094@ns.onramp.net>  
Rendered body type: text/plain

Hi Gang,

Well, I have already copied a little AMTOR/SITOR tonight with Dave's new HotModem release 1.3. But conditions went bad before I could get the videocam out. HF is not quite like the sat's, no keps!

73 Frank WB5IPM

---

### 38. Re: [DSP-93:809] Re: Heatstroke report

From: w6shp@amsat.org (Howard Sodja)  
Date: Mon, 05 Jun 1995 20:39:53 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506060339.UAA17645@hopf.dnai.com>  
Rendered body type: text/plain

>Dave,  
>  
>>Thanks for the kind words. I have just updated the distribution with  
>>some minor bugfixes, improved autostart and added SITOR/AMTOR Mode B  
>>(FEC) support. It's on host louie.udel.edu at pbu/ntp/modem.zip and  
>>pub/ntp/modem.tar.Z.  
>  
>Why don't you use ftp.tapr.org for your uploads so all DSP-93 stuff is  
together.  
>  
>For now, use /tapr/dsp93/upload but Mark can set up a directory for you  
>when he has time.  
>  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org

Yes, yes yes, Please use ftp.tapr.ftp if you can! I still cannot get your files. I just got a copy from Jim, K6OYY who was kind enough to upload it on K0-25. But I hate to ask him to do this for every update.

I hope to play with your program soon, but for now other things keep eating up all my spare time. I am looking forward to giving it a try.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

### 39. NON Heatstroke report thread

From: kc5ejk@onramp.net (Robert Winingham)  
Date: Mon, 5 Jun 1995 23:20:58 -0500  
To: dsp-93@tapr.org  
Message-ID: <v01510102abf9746e8ddb@[199.1.11.187]>  
Rendered body type: text/plain

I am trying to read and track reports of HOT units but we have now had over 10 messages in the last two days with the subject of " Re: Heatstroke report" that did not address the original topic .

Please title your postings to match the subject.

I am not trying to be the moderator but I keep all this stuff and it will help me to find the information later.

Thanks

Bob KC5EJK Dallas

---

### 40. Re: [DSP-93:818] location of Ham Com?

From: kc5ejk@onramp.net (Robert Winingham)  
Date: Mon, 5 Jun 1995 23:21:21 -0500  
To: dsp-93@tapr.org  
Cc: aprssig@tapr.org  
Message-ID: <v01510103abf9772a3225@[199.1.11.187]>  
Rendered body type: text/plain

>Guys,  
>  
>Where is Ham Com being held?  
>  
>>I'll be there with bells on!  
>>  
>>Greg  
>>  
>>> 73 Frank WB5IPM  
>>>  
>>> PS who is coming to Ham Com this weekend?  
>>>  
>>>  
>>  
>>  
>>  
>  
>Mark L. Hammond [KC4EBR]  
-----

The ARRL TEXAS state Convention and Ham-com is June 9-11  
at Arlington Convention center south lobby (Between FT Worth and Dallas)

Friday Noon to 5 PM party 5 to 10 PM  
Sat 9 am to 5 pm ARRL party 7 Pm  
Sun 9 am to 1 pm

Come by the AMSAT booth and say "Howdy"

Bob KC5EJK Dallas kc5ejk@onramp.net

---

### 41. Re: [DSP-93:818] location of Ham Com?

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 6 Jun 1995 00:47:58 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506060547.AAA07198@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Arlington Texas. Same as the All star game - right! You wouldn't believe the room rates this year :-)

Anyway - it is the West Gulf Div Conf and about 10,000 - 13,000 people will be there....big event.

Greg

According to Mark L. Hammond:

>  
> Guys,  
>



> Where is Ham Com being held?  
>  
> >I'll be there with bells on!  
> >  
> >Greg  
> >  
> >> 73 Frank WB5IPM  
> >>  
> >> PS who is coming to Ham Com this weekend?  
> >>  
> >>  
> >  
> >  
> >  
>  
> Mark L. Hammond [KC4EBR]  
>  
>

---

## 42. Ham-Com Attendance

From: Doug Howard <dhoward@metronet.com>  
Date: Tue, 6 Jun 1995 17:55:08 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506062255.AA13858@metronet.com>  
Rendered body type: text/plain

Frank, et al,

I'll also be at Ham-Com - probably at the AMSAT booth most of the time.

Look forward to seeing everyone there!

73s,  
Doug - KG5OA

---

## 43. Re: [DSP-93:817] Re: Heatstroke report

From: bstrick@plano.net (Bob Stricklin)  
Date: Tue, 6 Jun 1995 18:12:06 -0500  
To: dsp-93@tapr.org  
Message-ID: <9506062312.AA10034@dns>  
Rendered body type: text/plain

You guys need to pick up on a different message so the subject will change.  
Bob Stricklin, N5BRG

---

## 44. Re: [DSP-93:824] Ham-Com Attendance

From: fperkins@onramp.net  
Date: Tue, 6 Jun 1995 20:05:40 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506070105.UAA04316@ns.onramp.net>  
Rendered body type: text/plain

Hi Doug,

Great, see you there.

73 Frank WB5IPM

---

## 45. AO-13

From: dmedley@indirect.com (David Medley)  
Date: Wed, 7 Jun 1995 15:08:20 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506072208.PAA26702@bud.indirect.com>  
Rendered body type: text/plain

I am starting to try some AO-13 telemetry but am still confused about the hook up. I understand the TNC is not needed and that the audio output from the radio will go to radio port 1 but what connects to the serial input of the computer? Is another cable needed from the TNC disconnect?  
73 de Dave

---

## 46. AO-13

From: dmedley@indirect.com (David Medley)  
Date: Wed, 7 Jun 1995 15:33:43 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506072233.PAA02254@bud.indirect.com>

Rendered body type: text/plain

Guys please disregard my last message re A0-13 telemetry. I realized about 2us after I had sent it that it was a REALLY dumb question and I apologise for taking up time with it. I have made up the one cable required and will start experimenting with A0-13 tomorrow. Something happens to the brain as you get old. Very embarrassing. I am not really that dumb!!!  
73 de Dave

---

## 47. AO-13 Telemetry

From: dmedley@indirect.com (David Medley)  
Date: Thu, 8 Jun 1995 13:25:34 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506082025.NAA14095@bud.indirect.com>  
Rendered body type: text/plain

Frank I had a ball this morning with the A0-13 PSK telemetry program. Rather than use Procomm I used the AMSAT(Aust) P3C software which does a super job in separating and formatting the data. The original instructions for tuning the radio I found unclear and this is how I found it worked best for me:

1. Listen first to the CW transmission on the DSP speaker. Incidentally the DSP does a good job with this CW and eliminates all the noise. Tune until the note is around 1200 Hz. If you have used a lot of cw this is not difficult.
2. Now adjust the receiver audio gain until LED 6 is almost fully illuminated but still shows signs of flicker. This adjustment can be quite critical.
3. LED 4 should now be flashing. Tune the receiver up VERY SLOWLY and watch LED3. When a sync pulse is heard this LED will flash on and stay on while the frame is being sent. LED 4 should now be OFF. You should do this in say 100Hz steps, waiting at each step for 15-20 seconds.
4. You can watch the data coming in on the screen of P3C. Most of it is intelligible, especially the messages. You can save this all to a file as you are watching it. After you have received enough good data you can close the file and then use the analysis function of P3C to see exactly what is going on. Fascinating stuff.

Once you have tuned it a couple of times using the CW you can skip this step as you should then be able to judge the tone of the PSK. This is the part I found most frustrating until I hit upon the CW deal.

This works better than the G3RUH decoder which I used for many years in the early days of A0-13. So another box in my shack bites the dust. Anyone want a slightly used G3RUH 400 baud decoder?

73 de Dave

---

## 48. Re: [DSP-93:829] AO-13 Telemetry

From: fperkins@onramp.net  
Date: Thu, 8 Jun 1995 20:37:54 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506090137.UAA25377@ns.onramp.net>  
Rendered body type: text/plain

Hi Dave,

Thanks for your report on the A0-13 PSK telemetry modem. I thank you for explaining your approach to tuning. PSK is hot stuff but I have to play with each new PSK application until I develop my "ear" for tuning it - very hard to explain how to tune in words; you did a good job.

Early tomorrow morning I am going to try to video tape this modem for the Ham Com session Bob and I are doing Saturday. I am also going to tweak on the code a little more to see if I can make the tuning a bit easier (I will backfit some of the tricks in the latest microsat PSK modem).

'Keep you posted.

73 Frank WB5IPM

---

## 49. PSK93RLY.ASM

From: w6shp@amsat.org (Howard Sodja)  
Date: Thu, 08 Jun 1995 22:12:12 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506090512.WAA09551@hopf.dnai.com>  
Rendered body type: text/plain

Hello Frank,

Thanks to Ron's tips on what to read I am finally ready to settle down and study assembly programming. I am only missing one item, your psk93rly.asm. I just checked TAPR's FTP but only found an older ".obj" version of your program. Could you please send me the ".asm" version so I can study it and see if I can get the mic click changed so us Yaesu users can use your program?

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

## 50. Re: [DSP-93:831] PSK93RLY.ASM

From: fperkins@onramp.net  
Date: Fri, 9 Jun 1995 09:04:00 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506091404.JAA11500@ns.onramp.net>  
Rendered body type: text/plain

Hi Howard,

I think I just saw it in the new distribution disk files that Mark put up on ftp.tapr.org ...

If you can't find them (directory is called disk2 or rel2 or something like that) let me know and I'll try to make a file attachment (?) to an e-mail.

Ham Com is this weekend and I'm just about to go over there for a meeting; I should be on line again Sunday PM.

73 Frank WB5IPM

---

## 51. Kits

From: cstampf@mhv.net  
Date: Fri, 9 Jun 95 10:36:06 PDT  
To: dsp-93@tapr.org  
Message-ID: <Chameleon.4.01.2.950609103659.cstampf@cstampf.mhv.net>  
Rendered body type: text/plain

What happened to the May shipment of new kits? Does anyone know it's status.

---

## 52. HAMcom ' 96

From: bstrick@plano.net (Bob Stricklin)  
Date: Sat, 10 Jun 1995 22:02:19 -0500  
To: dsp-93@tapr.org  
Message-ID: <9506110302.AA16883@dns>  
Rendered body type: text/plain

Hamcom 95 was a success for the DSP-93.

We had a 30 minute presentation scheduled this afternoon at 1:00. Unfortunately there was a little mix up on the start time. Apparently some of the Hamcom literature had the session scheduled for 1:30. Well it worked out anyway. We had about 40 to 60 people come through the area during the presentation. The highlight was a video tape put together by Frank Perkins, WB5IPM. Frank had taped his station equipment working just about every possible digital mode known to amateur radio using the DSP-93. The tape included footage illustrating Dave Mills' HF program copying RTTY. The RTTY signal faded completely into the noise but the digital data kept coming in on the monitor error free, impressive.

While we have an impressive sweet of programs for the DSP-93, I still think we have not seen all of its capability.

It was an opportunity to talk to many people that have the kit. Unfortunately things were a little hectic so we did not get to discuss as much as I would like. This listserver will be a better place for that anyway so you can be included in the conversation.

### 53. Warning! AIO Interface Issue

From: bstrick@plano.net (Bob Stricklin)  
Date: Sun, 11 Jun 1995 14:20:07 -0500  
To: dsp-93@tapr.org  
Message-ID: <9506111920.AA05517@dns>  
Rendered body type: text/plain

When programming the AIO on the DSP-93 you sometimes reset the AIO using D15. Also D14 is used to tri state some of the AIO serial connections. We have discovered a timing issue that requires you to use external memory when attempting to change the state of the AIO reset or serial interface connections. These signals are set by using D14, and D15 and a write to RADIO\_GAIN which is one of the IO ports defined in an include file. When you write to the RADIO\_GAIN port you are strobing the clock of a D edge flip flop and the data input is D14 or D15. If you use external memory these values are stable before the flip flop receives a strobe. If you use internal memory then the instruction before the OUT instruction will operate faster (with less DSP clock cycles) and the data bus will not stabilize before the OUT instruction strobes the flip flop.

Once again the solution is to use external memory when preparing the AIO for configuration. The best policy will be to lift the AIO configuration section out of a proven piece of code if you need to make changes in the AIO configuration.

This problem reared its ugly head in some recent code. It was through the persistent efforts of Ron Parsons that we were able to understand the issues. Ron wrote a piece of test code which helped us understand the timing problem. Thanks Ron.

Bob Stricklin, N5BRG

### 54. Re: [DSP-93:835] Warning! AIO Interface Issue

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 11 Jun 1995 15:32:36 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac010013c026@[204.96.0.41]>  
Rendered body type: text/plain

Bob Stricklin, N5BRG said:

>Once again the solution is to use external memory when preparing the AIO for  
>configuration. The best policy will be to lift the AIO configuration section  
>out of a proven piece of code if you need to make changes in the AIO  
>configuration.

To make it easier for future programmers, the following is a fragment of code you can copy into your code to reset and enable the AIO.

The variable CFG should be in external memory, e.g. page 8 or higher. GAIN and REC\_IN set the software selectable gain and radio port.

```
LDPK USER_PAGE ; data mem page 8 (external)

AIO_RST LALK AIO_RESET|GAIN|REC_IN
 ; D14 low to reset AIO
 ; D15 high to tri-state lines to/from AIO
 ; Set gain and radio port
SACL CFG ; store in AIO CFG buffer
OUT CFG,RADIO_GAIN ; OUT to config port

CALL WAIT4 ; delay 100 ms

AIO_INI LALK LED_202|GAIN|REC_IN ; LED 202 on
 ; D14 low to reset AIO
 ; D15 low to enable DR & DX to CPU
 ; Set gain and radio port
SACL CFG ; store in AIO CFG buffer
OUT CFG,RADIO_GAIN ; OUT to config port

CALL WAIT4 ; delay 100 ms
```

```

AIO_ENA LALK AIO_ENABLE|GAIN|REC_IN
 ; D14 high to end AIO reset pulse
 ; D15 low to enable DR & DX to CPU
 ; Set gain and radio port
 SACL CFG ; store in AIO CFG buffer
 OUT CFG,RADIO_GAIN ; OUT to config port

 CALL WAIT4 ; delay 100 ms

;
; AIO CONFIG
;
 LDPK BASE_PAGE ; data mem page 0 (internal)

```

And on to configure the AIO, RA/TA, RB/TB, etc.

Good luck and have fun.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 55. Re: [DSP-93:831] PSK93RLY.ASM

From: fperkins@onramp.net  
Date: Sun, 11 Jun 1995 16:25:46 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506112125.QAA08612@ns.onramp.net>  
Rendered body type: text/plain

Hello Howard,

To convert psk93r1j.asm to psk93r1y.asm make the following .EQU changes:

```

 CNTH .EQU 144 ; change from 288 to 144 for YAESU
 CNTL .EQU 93 ; change from 186 to 93 for YAESU

```

these are the only changes I made in the source file between the two versions.

I realize now that Mark did not have the PSK93r1y.asm source to put on the distribution disks.

BE CAREFUL in switching the polarity of the tuning pulses ... it would be very easy to accidentally key the TX on the receiver while developing the code for "reverse" tuning pulses. PROTECT YOUR PREAMP from accidental TX keying.

Have Fun.

73 Frank WB5IPM

73 Frank WB5IPM

---

## 56. Re: [DSP-93:836] Re: Warning! AIO Interface Issue

From: fperkins@onramp.net  
Date: Sun, 11 Jun 1995 16:30:51 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506112130.QAA08933@ns.onramp.net>  
Rendered body type: text/plain

Hi Ron W5RKN,

Greg is on the way back to Austin and has the DSP-93 video tape we used at Ham-Com with him. He is going to digitize a couple of clips from the video for TAPR's web page.

If you are interested, get the tape from him once he is done. You will find out how tiny my ham shack really is ....

73 Frank WB5IPM

---

## 57. Lon's YAESU reversed 1st

From: fperkins@onramp.net  
Date: Sun, 11 Jun 1995 23:33:45 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506120433.XAA06280@ns.onramp.net>  
Rendered body type: text/plain

CQ Lon WB5PKJ  
cc: Doug and Howard

Tonight at 22:50 CDST, WB5PKJ's YAESU 736 locked onto AO-16 using DSP-93 "pulse high" tuning via the microphone input. As usual, I had to make ANOTHER cable to get things going.

Anyway, its showing some promise. Much more testing needed.

Yes Lon, you can have the cable ... I might even give you your radio back some time :-)

73 Frank WB5IPM

---

## 58. 9600 baud modem

From: dmedley@indirect.com (David Medley)  
Date: Tue, 13 Jun 1995 15:46:26 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506132246.PAA10012@bud.indirect.com>  
Rendered body type: text/plain

At last I have got around to 9600 baud. After making up the cable and hooking it up everything seemed to be normal except I was not seeing any data on the PB screen. It took me quite a while to figure out what was wrong. On the back of the MFJ1274 is a dip switch which is mainly used for changing the data rate of the link with the computer. It has three more switches which change the data rate with the radio. 1200, 2400 or external modem. These are so rarely used I had completely forgotten about them. They were set to 1200 baud of course. Changing the setting to external modem resulted in data coming through. I suggest that it might be a good idea to include this somewhere in the documentation, probably in the OPS MANUAL. With PB, the modem is in KI55 mode and the presence of data is indicated by the CON LED flashing. The PTT LED on the TNC is also active but the DCD LED remains dark. On the DSP LEDs 5 and 6 are active. I have been unable, so far, to achieve a situation where LED 6 remains on for any length of time and the received data rate seems to me to be rather slow. For maximum data rates I would assume LED 6 should remain firmly on and LED 5 firmly off. The adjustment of R215 seemed to be rather critical as did the radio tuning. For the latter I used the TRAKBOX for both antenna tracking and radio tuning. For U022 the discriminator needle remained centered but it did wander a little on the KITSATS. The offset in the TRAKBOX needs tweeking a little for the KITSATS but that does not appear to be a problem as the data rates with U022 and the KITSATS seemed very comparable. I would be interested to hear from others who have had experience with these modems. So far my results have been nowhere near those I was getting from my Tiny2/G3RUH combination with the same radio/antenna set up.

73 de Dave/KI6QE

---

## 59. Re: [DSP-93:840] 9600 baud modem

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 13 Jun 1995 18:31:19 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac03cc8ba8bb@[204.96.0.111]>  
Rendered body type: text/plain

Dave,

Glad to hear your good news.

>At last I have got around to 9600 baud. After making up the cable and  
>hooking it up everything seemed to be normal except I was not seeing any  
>data on the PB screen. It took me quite a while to figure out what was  
>wrong. On the back of the MFJ1274 is a dip switch which is mainly used for  
>changing the data rate of the link with the computer. It has three more  
>switches which change the data rate with the radio. 1200, 2400 or external  
>modem. These are so rarely used I had completely forgotten about them. They  
>were set to 1200 baud of course. Changing the setting to external modem  
>resulted in data coming through. I suggest that it might be a good idea to  
>include this somewhere in the documentation, probably in the OPS MANUAL.

Good idea. I have seen this reminder somewhere in the DSP-93 documentation set but couldn't find it now. Of course, this has to do with the MFJ TNC, not the DSP-93. I'll try to include this somewhere in the doc set -- all

the docs have been "frozen" for the next distribution, but there will probably be a build update. Remind me if necessary if I forget. Do you know if other TNCs besides the MFJ ones have this "problem"?

>With PB, the modem is in KISS mode and the presence of data is indicated by  
>the CON LED flashing. The PTT LED on the TNC is also active but the DCD LED  
>remains dark.

This is documented in FSK.DOC (see the DOC directory in the Rel 2 diskette images).

>On the DSP LEDs 5 and 6 are active. I have been unable, so  
>far, to achieve a situation where LED 6 remains on for any length of time  
>and the received data rate seems to me to be rather slow. For maximum data  
>rates I would assume LED 6 should remain firmly on and LED 5 firmly off.

LED 6 should be on MOST of the time, but probably not all (a signal fade, etc. will turn it off. LED 5 is on when LED 6 is off.

>The  
>adjustment of R215 seemed to be rather critical as did the radio tuning.

I am surprised at this. If you have a scope, look at TP1 and you should have a little less than 1V p-p on a good signal. But I copy fine with much less. Less is better than more. Radio tuning plus or minus a couple kHz should not lose too much.

>For  
>the latter I used the TRAKBOX for both antenna tracking and radio tuning.  
>For U022 the discriminator needle remained centered but it did wander a  
>little on the KITSATS. The offset in the TRAKBOX needs tweeking a little for  
>the KITSATS but that does not appear to be a problem as the data rates with  
>U022 and the KITSATS seemed very comparable. I would be interested to hear  
>from others who have had experience with these modems. So far my results  
>have been nowhere near those I was getting from my Tiny2/G3RUH combination  
>with the same radio/antenna set up.

Most users report results at least as good as G3RUH. Which FSK modem are you using? There are several in the Rel 2 diskette images of ftp.tapr.org.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 60. Re: [DSP-93:840] 9600 baud modem

From: fperkins@onramp.net  
Date: Tue, 13 Jun 1995 21:39:11 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506140239.VAA04464@ns.onramp.net>  
Rendered body type: text/plain

Hi Dave,

Using WISP with my DSP-93, I get around 93% to 97% ave eff on a good K0-23/25 pass, and about 84% to 88% eff on U0-22. I get almost solid DCD on the K0s but always a little blinking on U0-22.

I have downloaded over a megabyte on a K0-23 pass.

The AC coupling between the discriminator and the DSP-93 is critical, and will vary from radio to radio. The input level adjustment is also somewhat critical.

Do you have access to a scope?

73 Frank WB5IPM

---

## 61. Re: [DSP-93:842] Re: 9600 baud modem

From: dmedley@indirect.com (David Medley)  
Date: Tue, 13 Jun 1995 23:25:52 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506140625.XAA00875@bud.indirect.com>  
Rendered body type: text/plain

>

>Do you have access to a scope?

>

Yes I have a Tektronix 310. Single channel 3 inch.  
Dave  
>  
>

---

## 62. Re: [DSP-93:843] Re: 9600 baud modem

From: fperkins@onramp.net  
Date: Wed, 14 Jun 1995 10:59:48 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506141559.KAA08635@ns.onramp.net>  
Rendered body type: text/plain

Hi Dave,

Ron's reply and mine crossed in cyberspace last night. He gives good advice on the correct 9600 bps receive signal level. Please take a look at this with your scope. Pin 26 on the TLC32044 is the input pin; check the signal level there and also look for DC offset problems.

We have found the TLC32044 to be somewhat delicate, so probe it with care.

Please let us know what you see.

73 Frank WB5IPM

---

## 63. DCD mod for MFJ1274?

From: "Lawrence F. Johnston" <ljohnsto@carbon.cudenver.edu>  
Date: Wed, 14 Jun 1995 11:36:28 -0600 (MDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.OSF.3.91.950614113325.4909A-100000@carbon.cudenver.edu>  
Rendered body type: text/plain

I've ordered the DSP-93 and plan to use it with my FT-736, WISP, and my MFJ-1274. I plan to order the TNC-2 1.1.9 EPROM to upgrade the MFJ-1274 for use with the DSP-93.

Do I also need a "DED mod" for the MFJ-1274 for use with the DSP-93?

Larry, W0EIE

---

## 64. Re: [DSP-93:845] DCD mod for MFJ1274?

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 14 Jun 1995 13:03:05 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac04d414936d@[204.96.0.100]>  
Rendered body type: text/plain

>I've ordered the DSP-93 and plan to use it with my FT-736, WISP, and  
>my MFJ-1274. I plan to order the TNC-2 1.1.9 EPROM to upgrade the  
>MFJ-1274 for use with the DSP-93.

>

>Do I also need a "DCD mod" for the MFJ-1274 for use with the  
>DSP-93?

>

>Larry, W0EIE

I have it in my 1270B along with the 1.1.9 EPROM and it all works together. The DCD mod is not used with external modems such as the DSP-93. It works with the internal modem to the TNC so don't get it JUST for the DSP-93.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 65. Re: [DSP-93:844] Re: 9600 baud modem

From: dmedley@indirect.com (David Medley)  
Date: Wed, 14 Jun 1995 17:13:35 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506150013.RAA13714@bud.indirect.com>  
Rendered body type: text/plain



Thanks to Frank and Ron for the responses to my 9600 baud woes. This morning I had a GREAT pass with K0-25. LED 6 remained firmly on for almost all the time with an occasional flicker from LED 5. The "S" meter on PB read as high as 850bps on occasion. This is better than I ever saw with my Tiny2/G3RUH combo. As is usual with me the problem was non technical and caused by Murphy who has lived in my shack for many years!

I noted with an earlier pass from U022 that the receiver tuning seemed very critical, far more so than you would expect with FM. I was using the trakbox for receiver control and so I disconnected this and tuned manually but still noticed the critical nature of the operation. After the pass I tried to think through what may be happening and the only thought I had was bandwidth. This turned out to be right. The Yaesu 736 has two FM modes, wide and narrow band. I don't think I have ever used the narrow FM mode until I tried 9600 with my DSP. For the trakbox, for reasons unknown at present, took it upon itself to switch the 736 to narrow FM. This is something that is not immediately obvious to the unsuspecting operator as there is a little FM-N on the display which doesn't exactly hit you in the eye. Disconnecting the trakbox and switching the 736 to FM cured the problem in a hurry. Now I only had to retune maybe 2-3 times in the whole pass and the setting of R215 is not in any way critical. With a scope connected to TP-1 it seems that the voltage observed here needs to be much lower than 1vpp. Mine is actually set now at about .7vpp according to my 40 year old scope, so this measurement can only be described as suspect!!

The trakbox problem is, of course, an error in the datafile which was used to load the trakbox. Reloading the thing is a time consuming chore but the keps need updating anyway so I must do that. It will be just fine for the 9600 baud birds I am sure.

Thanks guys. I guess my next adventure will be to tackle RTTY starting with A0-13. I am guessing that one of the HF modems will do a good job with that.  
73 de Dave KI6QE

>  
>

---

## 66. Re: [DSP-93:847] Re: 9600 baud modem

From: fperkins@onramp.net  
Date: Wed, 14 Jun 1995 20:13:13 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506150113.UAA15277@ns.onramp.net>  
Rendered body type: text/plain

Hi Dave,

Very pleased to hear of your progress on 9600 bps FSK. I have Lon's 736 this week, and I have noticed the two FM bandwidths. I now know what they mean!

73 Frank WB5IPM

---

## 67. (no subject)

From: cstampf@mhv.net  
Date: Wed, 14 Jun 95 22:14:42 PDT  
To: dsp-93@tapr.org  
Message-ID: <Chameleon.4.01.2.950614221614.cstampf@cstampf.mhv.net>  
Rendered body type: text/plain

Does anyone know that status of kit build #2? I thought it was to be shipped during May? I have heard nothing from TAPR.

---

## 68. HF FSK modem update

From: Mills@huey.udel.edu  
Date: Fri, 16 Jun 95 0:49:09 EDT  
To: dsp-93@tapr.org  
Message-ID: <9506160049.aa16759@huey.udel.edu>  
Rendered body type: text/plain

Folks,

I think my RTTY/SITOR HF FSK modem may be ready for prime time. I've done a lot of work on the basic algorithms and cleaned up phase-lock loops, timing functions and logic. While a little fine tuning may be indicated in the PLL time constants, the basic program appears to be solid for both RTTY and SITOR operation, transmit-receive functions and in all modes. The distribution is on louie.udel.edu in the pub/ntp directory as the files modem.zip and modem.tar.Z; I'll upload it to the TAPR site when I catch my breath.

The carrier and noise-gate algorithms were refined to allow operation

right down in the mud, should the autostart false-alarm rate be tolerable. The thing is incredibly sensitive - I can turn the audio gain on my R72 all the way off and the modem will still copy the leakthrough. The autostart algorithms were improved and properly integrated with the synchronous modes. Transmitter flow control has been implemented using hardware handshaking (UART CTS line), along with buffer overflow checks. LED panel indications have been added to show the state of the CTS line and overflow condition.

Little bugs were caught and fixed in such things as transmit RTS delays. These are necessary in synchronous modes to avoid data loss at the receiver, which takes a second or two to synchronize. Several bugs were found and fixed in the SITOR decoder, which by the way now works like gangbusters.

The readme.txt file has been expanded (!) with detailed explanations of the algorithms, implementation and performance analysis. The performance analysis is crude, incomplete and probably has errors. I'll fix it up when I write a technical memo justifying why I spent much of the last six months playing with radios and DSP programs, instead of research on computer networks, which is what they pay me for. I hope and expect the DSP-93 to become a useful lab tool.

The heatstroke condition noted previously has apparently been fixed with the kind assistance of Jim Lynch, K4GV0. This project would not have been possible without his help and that of the TAPR guys.

I would of course be delighted to hear from anyone finding this little jewel of use, especially bug reports and performance comparisons. I thought of putting a little noise generator in the code so the modem could run performance curves on itself while I sleep. Not yet.

Dave, W3HCF

---

## 69. Heatstroke condition

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 16 Jun 1995 08:55:35 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac073d3792a4@[204.181.160.69]>  
Rendered body type: text/plain

Dave,

>

>The heatstroke condition noted previously has apparently been fixed with  
>the kind assistance of Jim Lynch, K4GV0. This project would not have  
>been possible without his help and that of the TAPR guys.

>

>Dave, W3HCF

Could you document for the group how the heatstroke problem was solved. I searched my archives and found no solution documented. I may be useful to others.

Thanks,

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 70. HF Modems

From: dmedley@indirect.com (David Medley)  
Date: Fri, 16 Jun 1995 08:57:20 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506161557.IAA03030@bud.indirect.com>  
Rendered body type: text/plain

There are too many Daves on this SIG!!! This one is for Dave (W3HCF). Am looking forward with great anticipation to your HF modems. Please catch your breath and get them on the wire. I have got my DSP working great on all the satellite modes and my next project is RTTY et al. Is there any reason why your RTTY modem would not work on A0-13 RTTY telemetry? I thought I would try it. I have the PSK working just fine. You might also let us know a couple of good HF frequencies to listen for PACTOR. Thanks for all your efforts, Dave.  
73 de Dave KI6QE

## 71. Re: [DSP-93:851] Heatstroke condition

From: Mills@huey.udel.edu  
Date: Fri, 16 Jun 95 13:25:23 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9506161325.aa19018@huey.udel.edu>  
Rendered body type: text/plain

Ron,

Jim Lynch, K4VG0, kindly sent me a working DSP93, which I used to swap boards, parts, etc. I quickly found my CPU board was at fault. I swapped all ICs, except the CPU and EPROMS and everything worked. Both boards in every possible configuration. I heat-cycled, power-cycled, program-cycled and motor-cycled. Nary a wisp of stroke even after days of cycling. I came to the conclusion, Jim agreeing, to leave the configurations as they are. I concluded that the problem was (is) on my CPU board and is a buried solder joint. I would have continued swapping to see which IC, if there is one, that might possibly be in some way involved with a timing problem. I could see none with scope-and-eyeball. Finally, I elected not to continue swapping in the interest of avoiding possibly breaking delicate wires, etc., while assembling/disassembling the stack. If my stroke returns, I intend to reheat the joints on the CPU board. Meanwhile, my life resumes. Thanks for your help with all the others on chasing this bug.

Dave

---

## 72. Re: [DSP-93:853] Re: Heatstroke condition

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 16 Jun 1995 14:01:26 -40962758 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <9506161801.AA13615@camel.campbell.edu>  
Rendered body type: text/plain

Guys,

Great news on the teamwork! Glad things are working for you both...

>  
> Ron,  
>  
> Jim Lynch, K4VG0, kindly sent me a working DSP93, which I used to swap  
> boards, parts, etc. I quickly found my CPU board was at fault. I swapped  
> all ICs, except the CPU and EPROMS and everything worked. Both boards  
> in every possible configuration. I heat-cycled, power-cycled, program-  
//  
> stroke returns, I intend to reheat the joints on the CPU board. Meanwhile,  
> my life resumes. Thanks for your help with all the others on chasing this  
> bug.  
>  
> Dave  
>

--  
Mark L. Hammond, KC4EBR  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

---

## 73. Re: [DSP-93:852] HF Modems

From: Mills@huey.udel.edu  
Date: Fri, 16 Jun 95 13:58:39 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9506161358.aa19073@huey.udel.edu>  
Rendered body type: text/plain

DaveM,

The modem works with standard 7.5-unit Baudot RTTY at all standard rates, and should work with any (unencrypted) RTTY transmission. It also works with SITOR Mode-B (FEC) transmissions, such as used by NAVTEX stations and the WIAW AMTOR broadcasts. SITOR is the parent of AMTOR, as defined

in CCIR Recommendation 476, and originally was intended for broadcasts to ships at sea. Specifically as an experiment in DSP receiver technology, I implemented an antenna-to-printer matched-filter receiver, which is believed a novel approach and is theoretically an optimum design. The modem does not do SITOR/AMTOR Mode A, which is the usual chirps you may hear on 20 meters. It does not do PACTOR, FAX or anything else but RTTY and SITOR Mode B. Maybe somebody, even me, may mount that mission someday; but, my present purpose is to do the RTTY and SITOR modes using the most advanced, theoretically optimal means available. This has been possible only since the current generation of DSPs, since a great deal of processing is required.

I can't tell you where to find PACTOR, but I can tell you the test frequencies I have been using for RTTY. They are from CFH, Halifax, on 122.5, 4271, 6330, 10536 and 13510 kHz as announced. Copy them at 75 baud, inverted (to us) polarity, 600 Hz shift. They must be using a DC loop to the modulator, since their frequency/shift wanders a few tens of Hz with each transmitter. Here the 122.5 Hz transmission is good on electrically quiet winter nights, 4271 kHz is a good multipath generator at night, 13510 kHz wanders in and out during the day and the other two mostly 24 hours. See the PCTOR documentation by Johan Forrer, KC7WW, Section 6.5 for a listing of SITOR coast station transmissions. A few years ago I copied nightly transmissions from FSY in France of Interpol messages, which were not only good for testing, but richly entertaining. Some coast stations broadcast a summary of the day's news (WCC Chatham, WMO Mobile come to mind), usually late in the evening. Crank through the coast station frequencies on 4, 6 and 8 MHz to find them pretty quick. Listen for the chirp-chirp (they are on 500-Hz channels, which gives the modem a workout) and catch the ident in Morse.

Dave

---

#### 74. Re: [DSP-93:850] HF FSK modem update

From: bstrick@plano.net (Bob Stricklin)  
Date: Fri, 16 Jun 1995 15:29:39 -0500  
To: dsp-93@tapr.org  
Message-ID: <9506162029.AA04818@dns>  
Rendered body type: text/plain

Good to have uploaded the modem. Can't wait to try it out.

> I hope and expect the DSP-93 to become a useful lab tool.

I like this comment also. I had hope the unit would be a good lab tool also. I think we really have a great learning package that would normally cost a great deal of money.

>

>The heatstroke condition noted previously has apparently been fixed with  
>the kind assistance of Jim Lynch, K4GV0. This project would not have  
>been possible without his help and that of the TAPR guys.

Do you know what it took to resolve the problem? If so we would like to know.

>

>I would of course be delighted to hear from anyone finding this little  
>jewel of use, especially bug reports and performance comparisons. I  
>thought of putting a little noise generator in the code so the modem  
>could run performance curves on itself while I sleep. Not yet.

Not yet? Sleep or Performance curves?

Thanks for your efforts on the project. I am sure lots of people will have many hours of enjoyment as a result of this group's combined efforts.

73,

Bob, N5BRG

---

#### 75. Re: [DSP-93:856] Re: HF FSK modem update

From: Tim Baggett <tim@NMSU.Edu>  
Date: Fri, 16 Jun 1995 15:00:47 -0600 (MDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950616145815.15278A-100000@wilma>  
Rendered body type: text/plain

On Fri, 16 Jun 1995, Bob Stricklin wrote:

> > I hope and expect the DSP-93 to become a useful lab tool.  
>  
> I like this comment also. I had hope the unit would be a good lab tool also.  
> I think we really have a great learning package that would normally cost a  
> great deal of money.  
  
> Bob, N5BRG

You're already there Bob. I've been trying to take the C25 code that has been written for DSP93 applications and learn from them. I'm using the PC31 PC plug in card from Innovative Systems for DSP comm research here. It is based on a 40 MHz C30. I have actually been surprised at the opcode differences between the C25 and the C30.

73

Tim, AA5DF

New Mexico State University, Las Cruces, NM  
Internet: tim@nmsu.edu  
AMPRnet: aa5df@armstrong.ampr.org

---

## 76. Re: [DSP-93:833] Kits

From: Greg Jones <gjones@tenet.edu>  
Date: Sat, 17 Jun 1995 13:10:17 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506171810.NAA29355@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Hello,

We sent a letter to all DSP-93 people on the order list last week telling the story.

The current plan is to ship the kits weekend next. The Tucson kitter will be shipping the kits to the office next week and I'll be attending the office to help in their preparations to ship.

We have all the parts except a few and they are expected in next week. If they do not arrive we will ship without them and ship the missing parts as soon as they arrive. This worked in December when this happened.

Looking forward to getting this batch out the door.

Cheers - Greg, WD5IVD

According to cstamf@mhv.net:

>  
> What happened to the May shipment of new kits? Does anyone know it's  
> status.  
>  
>

---

## 77. AO-13 Telemetry

From: dmedley@indirect.com (David Medley)  
Date: Sat, 17 Jun 1995 19:10:55 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506180210.TAA13111@bud.indirect.com>  
Rendered body type: text/plain

Here is a good sample of telemetry received from AO-13 this morning (Saturday). It is in P3C format and you need that to analyse the data.  
[Attachment: A013TELM.DAT; application/octet-stream; 10,752 bytes]

---

## 78. More on the HF FSK modem

From: Mills@huey.udel.edu  
Date: Sun, 18 Jun 95 0:24:31 EDT  
To: dsp-93@tapr.org  
Message-ID: <9506180024.aa24433@huey.udel.edu>  
Rendered body type: text/plain

Folks,

First, I uploaded the compressed archive files modem.tar.Z and modem.zip to the uploads directory on ftp.tapr.org. These are copies of the same files in the pub/ntp directory on louie.udel.edu.

Second, I crafted a crontab file for my Unix system to program my ICOM R72A to sniff the SITOR frequencies for both the AT&T stations and W1AW at expected times of broadcasts. Right now, the sniff is on every UTC hour of the day. The goal is to compare the performance of the modem with my AEA PK-232, which is not such a bad box in its own right. I conclude the modem needs more tuning refinements of the PLL and anti-garble algorithms. While the modem beats everything in simple Gaussian noise, it still needs to be hardened against the clanks and bangs we are used to on the HF bands. The first thing noticed is that the autostart threshold defaults too high, so that potentially good copy is lost. The "a" command can be used to ratchet it down a bit, which makes it about as good as the PK-232. But, it should be better.

Third, turns out the 6330 kHz frequency I reported for CFH is wrong. It is actually 6496, even though the broadcast itself claims 6330. Geeze, the stationkeepers should repair that tape.

Fourth, you might be interested in the little clutch of programs I use here to herd the radios and various TNCs. I uploaded a fresh version of minimuf.tar.Z, which is a handy MSDOS/Unix program to find good HF ray paths and frequencies. I use this in shell scripts to determine the best (?) frequency to hunt for SITOR and RTTY transmitters, given a schedule of known frequencies. I also uploaded a fresh version of icom.tar.Z, which is what I use to manage my herd of five ICOM radios and transceivers. For you Unix junkies, the distributions include a copy of my scripts. I put in a couple of mods to both of these distributions which I found handy in the SITOR hunt. Happy chime.

Dave  
W3HCF

---

## 79. HF modem questions

From: w6shp@amsat.org (Howard Sodja)  
Date: Sun, 18 Jun 1995 16:18:30 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506182318.QAA27932@hopf.dnai.com>  
Rendered body type: text/plain

Hello Dave,

I tried your HF modem program this weekend, but got results that have me confused. The Halifax RTTY freqs you (or another Dave) listed were transmitting CW every time I listened, so I tried to find RTTY on the ham bands. I have not used RTTY for several years, and was surprised to hear mostly AMTOR and packet. I only found a couple RTTY station good enough to get LED 1 to light, but all I ever got was garbage printed. I'd like a couple reality checks to be sure I am not making some basic mistake when I attempt to use your commands.

When I run your program, I get the following three lines shown below. The # is really a solid square that I cannot reproduce in this message. After the ... CEG line I press <enter> to get a solid square (#), then I enter "p" and the cursor jumps to the next line, where I type "2<enter>" for port 2. On the next line, after the solid square, I enter "m", where upon the cursor again jumps to the next line where I enter "4<enter>" for 170 Hz shift. I then enter "b" on the next line after the square, and "4<enter>" on the next line for 45.5 baud. I figure this should set me up for ham band RTTY. My screen show the following:

```
:0C1510007FA0CA397E397ECE6860D027EB
:0C151C00604049CB47602000CE60404991
:0C152800CB47602000CEG
#p
2
#m
4
#b
4
```

I tune a RTTY signal for LED 1 on, and tune back and forth until I get LED 3 on. Once garbage begins to print I try "b3", as I recall RTTY BBS's use 50 baud, and "i" as I recall occasionally in the past I found stations transmitting inverted. But I am not sure if my "b3<enter>" and "i<enter>" is really being acted on as it is in the midst of the stream of garbage being printed. I tried pressing enter first, then the command, but still no copy. Am I entering the commands properly and is the above screen what I should get? Perhaps in the future you could add a command confirmation routine, like the pk-232 has.

I set my PK-232 tnc to "baudot" but all the printing is on the modem's screen. Is the modem disconnect what feeds the "regenerated" data to the PK-232? Or do I need to cable to the PK-232's standard input connector? I assumed from your doc file that I'd have two screens, the modem's for commands and the tnc's for baudet printing. The tnc was in "cmd:" mode. I recall that is how I received, and "x" transmitted. Am I wrong here?

I used to always tune with my scope, as the + pattern made tuning a snap. I attached my DC coupled scope to the speaker's audio out jack but did not get anything to tune by. I turned up the volume but found that this made LED 1 come on even when there was no signal. Then, when the volume was turned all the way to the right, your program crashed. At this point I realized when you said to attach the scope to the AIO, I may have misinterpreted what AIO means. I assumed it means analog (in this case audio) in/out, so logically, the audio out jack would be the scope connection. But after your program crashed I checked the schematic. I see that the audio out has a LM386 amp that has a 50uf capacitor between it's output and the speaker jack. As you said use a DC coupled scope, I now think you must tap the scope signal elsewhere. Where exactly do you tap the scope for your tuning signal, and what type of wave form should I see? And why would the volume turned to max light LED 1?

I worked with the LM386 in the past and found it very unstable, with poor fidelity, so my guess is that when it is at max gain it is going into feedback oscillation, which may be effecting the DSP-93 somehow. Do you see LED 1 light with the volume at max?

Finally, when adjusting c+ or c-, do you need to c+<enter>c+<enter> for two steps, or can I just type c+c+, or c++? How many steps range are there? Does c- lower the threshold and make reception more sensitive, or does it decrease sensitivity?

I know these are a lot of questions, but they are the result of a lot of experimentation this weekend. I have a feeling there is just one or two points I am missing that are frustrating my efforts to copy. I had absolutely no luck at all with the AMTOR I tried to copy, not even any garbage. I also suspect that with the scope set for tuning, I will do better.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 80. Re: [DSP-93:861] HF modem questions

From: Mills@huey.udel.edu  
Date: Mon, 19 Jun 95 12:19:57 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9506191219.aa00570@huey.udel.edu>  
Rendered body type: text/plain

Howard,

You may not copy CFH in your part of the world, since it is across the continent from you and beams the other way. Try KMI Dixon (see my scripts) for SITOR. RTTY is getting rare on the ham bands, but I hear it reasonably often. WIAW bulletins are in both RTTY at 45 baud and SITOR/AMTOR. BBS stations I have heard are all upright shifts at 75 baud.

The modem commands are all character driven - no line-termination (CR) or editing facilities exist. For example, the sequence b4m8 (just like that) selects 45 baud, 170-Hz shift, matched filters. The modem does echo all characters; however, with the DSP-93 Windows program, two things happen. First, in transmit mode not all characters echo (but they do with Windows Terminal); second, when loading the program the garbage sequence you cite pops out upon completion of the load. I suspect this is a Windows problem, since the text looks vaguely like the tail end of an object file. In any case, it appears to be harmless.

There are two ways you can use this thing, directly connected to your computer/terminal or via a TNC. In neither case is a modem disconnect needed. In receive/regenerator mode, which is the default, the tones that come out the speaker jack can be connected directly to the TNC (I have one just like yours). Be sure the shifts of the modem and the TNC are the same. Alternatively, and this is also the default, the decoded characters are sent via the DPS-93 UART to your

computer/terminal. I use both ways for performance assessment.

Your DC scope should be connected to the AIO output, not the speaker jack. I miss the old crosshair scope tuning aid as much as you do; however, I find that using the mark/space LEDs and listening to the click-buzz in the speaker, as described in the tuning instructions, I can tune in signals quite accurately. That's saying something, since at 45 baud RTTY, this thing tunes real sharp.

In all the commands that expect modifiers like (case not sensitive) + and -, you need key the command letter only once; thus, your c++ works just fine.

Remember, the present modem does not copy AMTOR Mode A (ARQ), only Mode B (FEC). One of the reasons I launched this project was to see if I could get Mode B to work almost as well as Mode A and yet allow participation in a roundtable QSO.

Thanks for your feedback, which is most helpful. Patience on the SITOR; I'm still twiddling the knobs to improve performance.

Dave

---

## 81. HF modem QSOs?

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 19 Jun 1995 12:53:45 -40962758 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <9506191653.AA04816@camel.campbell.edu>  
Rendered body type: text/plain

Guys,

We could set up a schedule to test out our DSP-93s on the HF bands. When I get back, I will see who is interested. My HF rig, antenna, and amp need to have the dust blown out of them....besides, it would be fun to work you guys "live"!

Hey, anybody plan on using their DSP-93 on Field Day next weekend? If so, take some promo pictures for the effort! (or video!).

> Howard,  
>  
> You may not copy CFH in your part of the world, since it is across the  
> continent from you and beams the other way. Try KMI Dixon (see my  
> scripts) for SITOR. RTTY is getting rare on the ham bands, but I  
//  
(lots deleted)  
> Remember, the present modem does not copy AMTOR Mode A (ARQ), only  
> Mode B (FEC). One of the reasons I launched this project was to see  
> if I could get Mode B to work almost as well as Mode A and yet  
> allow participation in a roundtable QSO.  
>  
> Thanks for your feedback, which is most helpful. Patience on the SITOR;  
> I'm still twiddling the knobs to improve performance.  
>  
> Dave  
>

--  
Mark L. Hammond, KC4EBR

Campbell University  
Department of Biology

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## 82. Re: [DSP-93:862] Re: HF modem questions

From: bstrick@plano.net (Bob Stricklin)  
Date: Mon, 19 Jun 1995 12:28:55 -0500  
To: dsp-93@tapr.org  
Message-ID: <9506191728.AA25874@dns>  
Rendered body type: text/plain

Well, I also tried to get the modem working and I had about the same luck that Howard had.

I can see the need for a windows interface program here or to have the interface built into the program Tom wrote under applications.



I would feel better if the modem program gave you some sort of feedback when you gave it a command. I resorted to trying commands that I knew would change leds until I felt like it was working.

I have a lot of QRM because I am using a wire in the house for antenna. I will fix this and try again later. Dave, thanks for you comments to Howard, they will help me also.

Bob Stricklin, N5BRG

---

### 83. Re: [DSP-93:864] Re: HF modem questions

From: Mills@huey.udel.edu  
Date: Mon, 19 Jun 95 17:16:44 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9506191716.aa01610@huey.udel.edu>  
Rendered body type: text/plain

Bob,

? The modem does echo commands and LF following CR. I sometimes don't get echoes when transmitting while using the Windows DSP-93 program, but I do while using the Windows Terminal program. While trasnmitting, if I type several characters ahead, the analog loopback delay apparently is long enough for the Windoes DSP-93 program to believe them, so they do echo. The way you can tell is that the modem program converts everything to upper case.

Thanks for the feedback in any case.

Dave

---

### 84. new internet provider

From: ljs@west.net (L.J.Shepherd)  
Date: Mon, 19 Jun 1995 21:56:35 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506200457.VAA25273@acme.sb.west.net>  
Rendered body type: text/plain

Hi there: Could some kind SIG manager please change my e-mail address in the dsp-93 newsgroup ? Thanks....

L. J. Shepherd K6OYY

new email return address: ljs@west.net

---

### 85. Re: LO-19

From: dmedley@indirect.com (David Medley)  
Date: Mon, 19 Jun 1995 23:12:05 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506200612.XAA04636@bud.indirect.com>  
Rendered body type: text/plain

>Has LO-19 crashed?? There was mention (in Spanish) of a  
>possible computer crash of LO-19 on one of the 9600 baud birds  
>(if my English translation is correct). Last night I could  
>receive only a continuous signal with no apparent modulation or  
>data transfer.  
I checked LO-19 this morning, Chuck, and confirm your observation.  
LUSAT has been pretty reliable over the years but every now and then something goes wrong. I expect the command team will get it back soon.  
73 de Dave KI6QE

---

### 86. Re: [DSP-93:862] Re: HF modem questions

From: "Jim Lynch" <k4gvo@america.net>  
Date: Tue, 20 Jun 1995 05:23:12 +0000  
To: Mills@huey.udel.edu, dsp-93@tapr.org  
Message-ID: <199506200937.JAA29317@america.net>  
Rendered body type: text/plain

Dave,

You may have missed it, but I think Howard was selecting modem 4 not 8. I suspect that he isn't going to copy much rtty that way. Right??

Jim.  
Jim Lynch                      Fayetteville, GA                      K4GVO

---

**87. Re: [DSP-93:863] HF modem QSOs?**

From: "Jim Lynch" <k4gvo@america.net>  
Date: Tue, 20 Jun 1995 05:26:30 +0000  
To: hammond@camel.campbell.edu (Mark L. Hammond), dsp-93@tapr.org  
Message-ID: <199506200940.JAA29353@america.net>  
Rendered body type: text/plain

> Date: Mon, 19 Jun 1995 12:07:12 -0500  
> Reply-to: dsp-93@tapr.org  
> From: hammond@camel.campbell.edu (Mark L. Hammond)  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:863] HF modem QSOs?

> Guys,  
>  
> We could set up a schedule to test out our DSP-93s on the HF bands.  
> When I get back, I will see who is interested. My HF rig, antenna,  
> and amp need to have the dust blown out of them....besides, it would  
> be fun to work you guys "live"!  
>  
> Hey, anybody plan on using their DSP-93 on Field Day next weekend? If  
> so, take some promo pictures for the effort! (or video!).  
>  
>  
Count me in. But now I'll have to wire up more than the audio in, I  
guess..... I haven't tried transmitting yet...  
>  
> --  
> Mark L. Hammond, KC4EBR  
>  
> Campbell University  
> Department of Biology  
>  
Jim Lynch                      Fayetteville, GA                      K4GVO  
'86 GL1200I                      k4gvo@america.net                      44.36.34.20

---

**88. Re: [DSP-93:861] HF modem questions**

From: "Jim Lynch" <k4gvo@america.net>  
Date: Tue, 20 Jun 1995 05:37:26 +0000  
To: w6shp@amsat.org (Howard Sodja), dsp-93@tapr.org  
Message-ID: <199506200951.JAA29586@america.net>  
Rendered body type: text/plain

> Date: Sun, 18 Jun 1995 18:30:15 -0500  
> Reply-to: dsp-93@tapr.org  
> From: w6shp@amsat.org (Howard Sodja)  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:861] HF modem questions

> Hello Dave,  
>  
> I tried your HF modem program this weekend, but got results that have me  
> confused. The Halifax RTTY freqs you (or another Dave) listed were  
> transmitting CW every time I listened, so I tried to find RTTY on the ham  
> bands. I have not used RTTY for several years, and was surprised to hear  
> mostly AMTOR and packet. I only found a couple RTTY station good enough to  
> get LED 1 to light, but all I ever got was garbage printed. I'd like a  
> couple reality checks to be sure I am not making some basic mistake when I  
> attempt to use your commands.  
>  
> When I run your program, I get the following three lines shown below. The #  
> is really a solid square that I cannot reproduce in this message. After the  
> .. CEG line I press <enter> to get a solid square (#), then I enter "p" and  
> the cursor jumps to the next line, where I type "2<enter>" for port 2. On  
> the next line, after the solid square, I enter "m", where upon the cursor  
> again jumps to the next line where I enter "4<enter>" for 170 Hz shift. I  
> then enter "b" on the next line after the square, and "4<enter>" on the next  
> line for 45.5 baud. I figure this should set me up for ham band RTTY. My  
> screen show the following:  
>  
> :0C1510007FA0CA397E397ECE6860D027EB  
> :0C151C00604049CB47602000CE60404991  
> :0C152800CB47602000CEG  
> #p  
> 2  
> #m  
> 4

```

> #b
> 4
>
> I tune a RTTY signal for LED 1 on, and tune back and forth until I get LED 3
> on. Once garbage begins to print I try "b3", as I recall RTTY BBS's use 50
> baud, and "i" as I recall occasionally in the past I found stations
> transmitting inverted. But I am not sure if my "b3<enter>" and "i<enter>" is
> really being acted on as it is in the midst of the stream of garbage being
> printed. I tried pressing enter first, then the command, but still no copy.
> Am I entering the commands properly and is the above screen what I should
> get? Perhaps in the future you could add a command confirmation routine,
> like the pk-232 has.
>
> I set my PK-232 tnc to "baudot" but all the printing is on the modem's
> screen. Is the modem disconnect what feeds the "regenerated" data to the
> PK-232? Or do I need to cable to the PK-232's standard input connector? I
> assumed from your doc file that I'd have two screens, the modem's for
> commands and the tnc's for baudet printing. The tnc was in "cmd:" mode. I
> recall that is how I received, and "x" transmitted. Am I wrong here?
>
> I used to always tune with my scope, as the + pattern made tuning a snap. I
> attached my DC coupled scope to the speaker's audio out jack but did not get
> anything to tune by. I turned up the volume but found that this made LED 1
> come on even when there was no signal. Then, when the volume was turned all
> the way to the right, your program crashed. At this point I realized when
> you said to attach the scope to the AIO, I may have misinterpreted what AIO
> means. I assumed it means analog (in this case audio) in/out, so logically,
> the audio out jack would be the scope connection. But after your program
> crashed I checked the schematic. I see that the audio out has a LM386 amp
> that has a 50uf capacitor between it's output and the speaker jack. As you
> said use a DC coupled scope, I now think you must tap the scope signal
> elsewhere. Where exactly do you tap the scope for your tuning signal, and
> what type of wave form should I see? And why would the volume turned to max
> light LED 1?
>
> I worked with the LM386 in the past and found it very unstable, with poor
> fidelity, so my guess is that when it is at max gain it is going into
> feedback oscillation, which may be effecting the DSP-93 somehow. Do you see
> LED 1 light with the volume at max?
>
> Finally, when adjusting c+ or c-, do you need to c+<enter>c+<enter> for two
> steps, or can I just type c+c+, or c++? How many steps range are there?
> Does c- lower the threshold and make reception more sensitive, or does it
> decrease sensitivity?
>
> I know these are a lot of questions, but they are the result of a lot of
> experimentation this weekend. I have a feeling there is just one or two
> points I am missing that are frustrating my efforts to copy. I had
> absolutely no luck at all with the AMTOR I tried to copy, not even any
> garbage. I also suspect that with the scope set for tuning, I will do better.
>
> 73
> Howard Sodja, W6SHP In the SF Bay area
> AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605
> Microsats @ KO-23 and AO-16
> w6shp@amsat.org
>
>
I've had good success with b4m8. m4 is sitor I think.

```

I don't know if it really works this way, but I didn't seem to find that my typing had any effect when there was output from the program. I found that I had to turn the af gain on the rec down, hit enter and then enter the commands. While dave says that b4m8 all run together works, I do it like you do, 'cause I'm not convinced. You'll find that you need the unshift on space option. I added that to dave's code and sent it to him. I suspect he will clean it up and release it one of these days. If you want it, I can send it to you. You are right there isn't a lot of rtty on these days, but I still hear some. Tune 14080-14090. Nothing much ever outside of these frequencies.

Later,  
Jim.  
Jim Lynch                      Fayetteville, GA              K4GVO  
'86 GL1200I                      k4gvo@america.net              44.36.34.20

## 89. Re: [DSP-93:862] Re: HF modem questions

From: Mills@huey.udel.edu  
Date: Tue, 20 Jun 95 10:04:08 EDT  
To: k4gvo@america.net  
Cc: Mills@huey.udel.edu, dsp-93@tapr.org  
Message-ID: <9506201004.aa04794@huey.udel.edu>  
Rendered body type: text/plain

Jim,

Mode 4 is 170-Hz shift with IIR filters. That should work okay; however, at that narrow shift I prefer to use the matched filters. The latter are more sharp, but harder to tune.

Dave

---

## 90. Re: [DSP-93:870] Re: HF modem questions

From: Mills@huey.udel.edu  
Date: Tue, 20 Jun 95 10:15:40 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9506201015.aa04827@huey.udel.edu>  
Rendered body type: text/plain

Jim,

The commands b1 through b6 select only the baud rate, while commands m1 through m4 select the shift (IIR filters) and m5 through m8 select corresponding shifts (matched filters). The y command selects SITOR and also sets the baud rate and shift as per CCIR recommendations. For ordinary amateur operation at 45 baud, I recommend b4m8, which selects 45 baud, 170-Hz shift, matched filters. The m4 command selects the same shift, but IIR filters. The matched filters are sharper than the IIR filters and a bit more touchy to tune, but deliver the best performance.

Dave

---

## 91. CCIR 476/624 recommendations neded

From: Mills@huey.udel.edu  
Date: Tue, 20 Jun 95 10:25:21 EDT  
To: dsp-93@tapr.org  
Message-ID: <9506201025.aa04859@huey.udel.edu>  
Rendered body type: text/plain

Guys,

Does somebody out there have a copy of the CCIR 476 and/or 625 recommendations on SITOR? Years ago I had a copy, but it's probably at the bottom of the Atlantic about now. Our university library has nothing like that (fer shame). I can get it from Omnicom bundled in a volume of other stuff for \$464, but not unbundled. That's too steep for my petty cash piggybank. Before going off to write a proposal or something (modern life), I'd like to see if there is a copy floating around somewhere. As I would like to use it in conjunction with a teaching lab, copying it would be fair use anyway. Your indulgence would be miraculously preserved.

Dave

---

## 92. DSP-93 and WiSP

From: dmedley@indirect.com (David Medley)  
Date: Tue, 20 Jun 1995 14:59:45 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506202159.OAA21862@bud.indirect.com>  
Rendered body type: text/plain

I have been struggling with the setup screens for WiSP and have run into a couple of things I don't fully understand.

1. In the COMMUNICATIONS setup screen there are two boxes at the end marked TNC and DSP Mode. The help file does not help in this case. Is this an either or type situation? What is the DSP mode? Do both boxes have to be filled in or just one?
2. In the same COMMUNICATIONS screen there is a box for speed. You are not given a choice for 1200 baud and it will not accept 1200 if you try and fill the box in manually. This being the case how do I use the DSP with WiSP and the 1200 baud satellites? It says clearly in the OPS manual that the TNC must be set at 1200 baud for the microsats and for A0-13 telemetry. I am not sure why this is but I have tried setting the modem at 9600 for PACSAT/LUSAT with no results. Switching back to 1200 baud

everything runs just fine. Incidentally this fiddling with DIP switches in the back of a TNC gets pretty old rather quickly!!

3. This is a kind of corrolary to 2. Can WiSP be used as a terminal for terrestrial packet? If 'YES' then how?

WiSP is a little intimidating owing to total lack of documentation. Some of the help files are helpful but others just create more confusion. LUSAT threw me a loop yesterday by crashing. I tore most of my hair out wondering why I was not getting any data until I looked on the scope and saw there was no data!! WiSP looks to be a nice piece of software if I can solve the above problems.  
73 de Dave KI6QE

---

### 93. Re: [DSP-93:874] DSP-93 and WiSP

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 20 Jun 1995 17:40:58 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac0cfd096ae0@[204.96.0.100]>  
Rendered body type: text/plain

Dave,

>I have been struggling with the setup screens for WiSP and have run into a  
>couple of things I don't fully understand.  
> 1. In the COMMUNICATIONS setup screen there are two boxes at the end marked  
> TNC and DSP Mode. The help file does not help in this case. Is this an  
> either or type situation? What is the DSP mode? Do both boxes have to be  
> filled in or just one?

The DSP-93 is not a TNC. I use an MFJ 1270B TNC with my DSP-93 in satellite operation. In the COMMUNICATIONS setup, I use TNC = TNC-2, DSP Mode is not relevant here as there is no modem code for the 1270B.

> 2. In the same COMMUNICATIONS screen there is a box for speed. You are not  
> given a choice for 1200 baud and it will not accept 1200 if you try and  
> fill the box in manually. This being the case how do I use the DSP with  
> WiSP and the 1200 baud satellites? It says clearly in the OPS manual that  
> the TNC must be set at 1200 baud for the microsats and for AO-13  
> telemetry. I am not sure why this is but I have tried setting the modem  
> at 9600 for PACSAT/LUSAT with no results. Switching back to 1200 baud  
> everything runs just fine. Incidentally this fiddling with DIP switches in  
> the back of a TNC gets pretty old rather quickly!!

The Communications speed is the speed of the link between the TNC and the computer. That should be at least as high as the data rate from the satellite.

I use 9600 for both 1200 and 9600 satellites as my computer drops bytes on the TNC-Computer link at 19200.

Pray for a TNC-95 sooner rather than later.

> 3. This is a kind of corrolary to 2. Can WiSP be used as a terminal for  
> terrestrial packet? If 'YES' then how?

The easiest way is to add a Program to the Program menu and link it to your packet terminal program. I use Windows Terminal.

>WiSP is a little intimidating owing to total lack of documentation. Some of the  
>help files are helpful but others just create more confusion. LUSAT threw me a  
>loop yesterday by crashing. I tore most of my hair out wondering why I was not  
>getting any data until I looked on the scope and saw there was no data!!  
>WiSP looks to be a nice piece of software if I can solve the above problems.  
>73 de Dave KI6QE

There is an amazing amount of info in the Help file. Perhaps you can print it all out and have a manual.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 94. Re: [DSP-93:874] DSP-93 and WiSP

From: Roy Welch <rdw@crl.com>  
Date: Wed, 21 Jun 1995 06:37:17 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950621062521.23206F-100000@crl11.crl.com>

Rendered body type: text/plain

On Tue, 20 Jun 1995, David Medley wrote:

> I have been struggling with the setup screens for WiSP and have run into a  
> couple of things I don't fully understand.  
> 1. In the COMMUNICATIONS setup screen there are two boxes at the end marked  
> TNC and DSP Mode. The help file does not help in this case. Is this an  
> either or type situation? What is the DSP mode? Do both boxes have to be  
> filled in or just one?

The TNC selects the TNC type. The DSP Mode is used only if the TNC type is a DSP. Remember, the DSP93 is a modem, not a TNC. For example, I use my DSP93 with a TNC2. The TNC entry in WiSP is TNC2 and the DSP Mode is blank.

>  
> 2. In the same COMMUNICATIONS screen there is a box for speed. You are not  
> given a choice for 1200 baud and it will not accept 1200 if you try and  
> fill the box in manually. This being the case how do I use the DSP with  
> WiSP and the 1200 baud satellites? It says clearly in the OPS manual that  
> the TNC must be set at 1200 baud for the microsats and for AO-13  
> telemetry. I am not sure why this is but I have tried setting the modem  
> at 9600 for PACSAT/LUSAT with no results. Switching back to 1200 baud  
> everything runs just fine. Incidentally this fiddling with DIP switches in  
> the back of a TNC gets pretty old rather quickly!!

This is for the PC to TNC speed, not the radio port speed.

>  
> 3. This is a kind of corollary to 2. Can WiSP be used as a terminal for  
> terrestrial packet? If 'YES' then how?

In the Satellite Setup, you can specify a different Program than the default MSPE. This is so you can communicate with MIR, FO-20, etc. with your favorite TNC program. However, you may only be able to communicate with the callsign specified in the setup. I don't know for sure.

> WiSP is a little intimidating owing to total lack of documentation. Some of the  
> help files are helpful but others just create more confusion. LUSAT threw me a  
> loop yesterday by crashing. I tore most of my hair out wondering why I was not  
> getting any data until I looked on the scope and saw there was no data!!  
> WiSP looks to be a nice piece of software if I can solve the above problems.  
> 73 de Dave KI6QE

There is a lot of good documentation, but it helps to have grown up with the program. Chris is staying busy putting out the new features everyone is asking for. A good ops manual would be nice, but there are so many different configurations possible, I'm not sure it is easily doable.

73, Roy

---

## 95. file cleanup

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 21 Jun 1995 19:36:54 +0000  
To: dsp-93@tapr.org  
Message-ID: <9506211930.AA14194@camel.campbell.edu>  
Rendered body type: text/plain

Hello All,

I have done a little clean up of the files in the dsp93 ftp files area. Some things were deleted, others moved (to a subdirectory called "util" for example). If you can't find something that used to be there, just ask me about it.

Mark L. Hammond [KC4EBR]

---

## 96. Re: [DSP93DEV:1417] housecleaning

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 21 Jun 1995 15:11:19 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199506212011.PAA24436@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

I don't think I have posted it yet - but I have uploaded the manuals for the DSP-93 (Assembly and Operations) in a folder called manual in the dsp-93 area.

They are in pdf format.

The Windows and Mac readers are in the utils directory one level up.

I have generated pdf files for all the various TAPR manuals I have on hand...the other kit manuals are in info/kits/manual.

As soon as the new Development/Programming Manual is done - we will make that available.

The ultimate goal is to make these available via the TAPR Web pages.

Have fun - Greg

---

## 97. WiSP and the DSP

From: dmedley@indirect.com (David Medley)  
Date: Wed, 21 Jun 1995 19:39:20 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506220239.TAA25263@bud.indirect.com>  
Rendered body type: text/plain

Thanks to help from Frank and Roy I have WiSP running with K0-23 this morning. When I say running I mean that it was receiving lots of directory entries and other data. Lots more to do I am sure but I feel confident that I now understand a whole lot more about it. What a neat piece of software!!!  
thanks guys de Dave KI6QE

---

## 98. DSP-93 audio test file

From: kc5ejk@onramp.net (Robert Winingham)  
Date: Wed, 21 Jun 1995 23:23:05 -0500  
To: dsp-93@tapr.org  
Message-ID: <v01520d00ac0ea0151ca8@[199.1.11.175]>  
Rendered body type: text/plain

I have placed in the Upload area a PC WAV file to use with the DSP-93 for 1200 Baud Packet testing. The File is called PKT1200.ZIP  
I got this from a Ham archive. I had no problem playing back this PC Sound format WAV sound on my Mac using "SoundAPP"

I would thing that the other DSP-93 modes could also have test sounds files. This way we would be testing with the same data.

Bob KC5EJK Dallas kc5ejk@onramp.net

---

## 99. HF modem feedback

From: w6shp@amsat.org (Howard Sodja)  
Date: Wed, 21 Jun 1995 23:10:45 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506220610.XAA18667@hopf.dnai.com>  
Rendered body type: text/plain

Dave,

I finally got your program to copy RTTY, by using M8 rather than M4. But there is a bug with the "M" command. I use port 2, but when I give any "M" command the LEDs show no signal. I must "P2" again to get it working. I assume it is switching back to port 1.

Also, is there an unshift command? Several times while copying RTTY printing switched to shift and I had to watch numbers until it shifted back to letters. You need a command to force letters or numbers like the PK-232's "L" and "N" commands.

Another useful feature would be for the program to return it's status if a command with no number is entered, again like the PK-232. I was playing around with your commands and forgot where I left a command a couple times. It would be a nice touch to just be able to press "B" and get the current baud rate echoed back. Perhaps this feature could be enhanced so that when a command is given, the current and new values are echoed, again, as the PK-232 does. So when I enter "B4" I see "B4 was 5". I realize you have the more important work to do on the code that deals with the signal reception and decoding. But new users (like myself) would appreciate feedback that would let them know that their commands were acted upon, or what the current state of a command is. Just seeing the command echoed as typed is not reassuring if things are not working right.

Finally, I asked if the AI0 was Audio In/Out, and if the speaker jack was

the scope attachment point. Your reply to not attach the scope to the speaker, but to the AIO has me still confused. Could you please be more specific? I can not tell from the schematic where you mean? Do I need to make another hole in the rear panel for a jack that taps to the AIO (analog in/out?) pcb, on some trace, test point, or component, or is there a pin on the DB25 I can get this scope signal from?

Thanks for all the work you have done to get your program as far as you have. I look forward to your future updates. And thanks for putting on TAPR's FTP. I never could get it on louie.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 100. Re: [DSP-93:881] HF modem feedback

From: "Jim Lynch" <k4gvo@america.net>  
Date: Thu, 22 Jun 1995 05:06:40 +0000  
To: dsp-93@tapr.org  
Message-ID: <199506220921.JAA26279@america.net>  
Rendered body type: text/plain

> Date: Thu, 22 Jun 1995 01:26:26 -0500  
> Reply-to: dsp-93@tapr.org  
> From: w6shp@amsat.org (Howard Sodja)  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:881] HF modem feedback

> Dave,  
>

> Finally, I asked if the AIO was Audio In/Out, and if the speaker jack was  
> the scope attachment point. Your reply to not attach the scope to the  
> speaker, but to the AIO has me still confused. Could you please be more  
> specific? I can not tell from the schematic where you mean? Do I need to  
> make another hole in the rear panel for a jack that taps to the AIO (analog  
> in/out?) pcb, on some trace, test point, or component, or is there a pin on  
> the DB25 I can get this scope signal from?

Me too. I haven't found an AIO either. Must be an Accessory  
Installed, Optionally. 8^)

>

Jim.  
Jim Lynch                      Fayetteville, GA              K4GVO  
'86 GL1200I                  k4gvo@america.net              44.36.34.20

---

## 101. pdf manuals in dsp93/manuals

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 22 Jun 1995 10:23:16 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac0f3a208381@[204.96.0.106]>  
Rendered body type: text/plain

I am getting unacceptable results with the pdf manuals in dsp93/manuals.

I am opening them with Acrobat Reader 2.0.1 (Macintosh).

The headers are shown as horizontal lines.

I get a Postscript error if I try to print.

The file AcroRead.mac in the utils directory is in unknown format (it won't execute, abd Stuffit Expander doesn't recognize it)

Help!

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 102. Re: [DSP-93:883] pdf manuals in dsp93/manuals

From: "Paul Beckmann" <paul@eye.psych.umn.edu>  
Date: Thu, 22 Jun 95 11:26:37 CDT  
To: dsp-93@tapr.org  
Message-ID: <9506221626.AA25013@eye.psych.umn.edu>



Rendered body type: text/plain

Ron et al. --

I was able to get the .pdf's to my Mac with Fetch 2.1.2 in the BINARY mode and read/print them with Acrobat Reader 2.0. The only error I got was 'The font "Swing-Bold" contains a bad /BBox' on opening for two of the three files.

--Paul Beckmann  
WA0RSE@amsat.org

Greg---

I thought this was a TAPR/\*\*AMSAT\*\* project. Shouldn't the documentation reflect this alliance? Or has something changed??

---

### 103. Re: [DSP-93:881] HF modem feedback

From: Mills@huey.udel.edu  
Date: Thu, 22 Jun 95 12:38:28 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9506221238.aa13712@huey.udel.edu>  
Rendered body type: text/plain

Howard,

Yours is the second request for unshift-on-space; that's easy to do. A neglected comment in the instructions is that the mode (m) commands do reset some of the defaults; that should be fixed. The original intent was that the mode commands set up a particular combination of filter, shift and baud rate; e.g., 170-Hz shift, 45 baud, matched filters, but I got sidetracked. Same on the echoes; however, that would require a lot more internal state (bit decoding, character conversion, etc., than I planned. My original plan was that a canned sequence of characters, like m8b4 would be embedded like AT modem commands in sequences that can be generated by many terminal programs, like Windows Terminal. That way, selection of a defaults file and "making a call" amounts to sending the string to the modem and waiting for an acknowledgment. I also have to admit to a certain love for Unix shell scripts, like the ones I use to control my radios. The shell scripts can of course say anything. Notwithstanding any of the above, I hear you and will consider it when time is available.

The "AIO output" is a direct connection to the D/A converter. There is a header pin inside the unit for that which I normally use; however, there are provisions to short the coupling capacitor between that and the output pin on the DIN connector. An ordinary header jumper could be used to short that capacitor, in which case the scope could be connected directly to the DIN connector. Unfortunately, the level there would probably be too high for a mike connection, since the output pot would have to be turned way up.

Thanks for the feedback and suggestions. I think the SITOR decoder is approaching the performance I expected; at least, it synchronizes on valid SITOR signals I can't detect by ear. This raises interesting issues on how you can have a QSO with a signal you can't find by ear. Maybe we need negative S-meter readings?

Dave

---

### 104. Re: [DSP-93:883] pdf manuals in dsp93/manuals

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 22 Jun 1995 12:59:55 -40962758 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <9506221659.AA18237@camel.campbell.edu>  
Rendered body type: text/plain

I got an error when trying to run the .exe file that was uploaded. I am using Win95. Any Win95 or win3.1 users get the windows reader successfully installed?

My computer simply says: error \*0003\*. Rather meaningless....

>  
> I am getting unacceptable results with the pdf manuals in dsp93/manuals.  
>  
//

>  
> Help!  
>  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

--  
Mark L. Hammond, KC4EBR

Campbell University  
Department of Biology

---

## 105. Re: [DSP-93:884] Re: pdf manuals in dsp93/manuals

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 22 Jun 1995 13:00:10 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac0f5f006b53@[204.96.0.65]>  
Rendered body type: text/plain

>Ron et al. --  
>  
>I was able to get the .pdf's to my Mac with Fetch 2.1.2 in the BINARY mode  
>and read/print them with Acrobat Reader 2.0. The only error I got was  
>'The font "Swing-Bold" contains a bad /BBox' on opening for two of the  
>three files.  
>  
>--Paul Beckmann  
> WA0RSE@amsat.org

I get Adobe Type Manager error -20 (using ATM 3.8.1). Also Font  
Substitution Turned Off. Font Insignia not found. Postscript error on  
printing.

Paul, do the Bold headers display for the sections or do they display as a line?

Did you download AcroRead.mac?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 106. Re: [DSP-93:883] pdf manuals in dsp93/manuals

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 22 Jun 1995 13:12:16 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506221812.NAA28436@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

Thanks Ron - I'll look them over...could be I did it wrong...although they  
show up on my system.

Greg

According to Ronald G. Parsons:

>  
> I am getting unacceptable results with the pdf manuals in dsp93/manuals.  
>  
> I am opening them with Acrobat Reader 2.0.1 (Macintosh).  
>  
> The headers are shown as horizontal lines.  
>  
> I get a Postscript error if I try to print.  
>  
> The file AcroRead.mac in the utils directory is in unknown format (it won't  
> execute, and Stuffit Expander doesn't recognize it)  
>  
> Help!  
>  
>  
> Ron W5RKN

>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

---

### 107. Re: [DSP-93:887] Re: pdf manuals in dsp93/manuals

From: "Paul Beckmann" <paul@eye.psych.umn.edu>  
Date: Thu, 22 Jun 95 13:19:27 CDT  
To: dsp-93@tapr.org  
Message-ID: <9506221819.AA25387@eye.psych.umn.edu>  
Rendered body type: text/plain

Ron--

I am not using Adobe Type Manager at all. I am using system 7.0.1 on a Mac IICx. The Bold headers display for the sections, underlined.

I did not get AcroRead.mac from the tapr site. I got it from a Web Site for reading their .pdf's. I'll download the tapr reader and see if that is the trouble.

--Paul

---

### 108. Re: [DSP-93:884] Re: pdf manuals in dsp93/manuals

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 22 Jun 1995 13:48:26 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506221848.NAA09798@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain

You can expect some errors like this -- I got the same thing...I couldn't get my distiller program to handle some of the fonts I use...but they should just display in another font instead.

greg

According to Paul Beckmann:

>  
> Ron et al. --  
>  
> I was able to get the .pdf's to my Mac with Fetch 2.1.2 in the BINARY mode  
> and read/print them with Acrobat Reader 2.0. The only error I got was  
> 'The font "Swing-Bold' contains a bad /BBox' on opening for two of the  
> three files.  
>  
> --Paul Beckmann  
> WA0RSE@amsat.org  
>  
> Greg---  
> I thought this was a TAPR/\*\*AMSAT\*\* project. Shouldn't the documentation  
> reflect this alliance? Or has something changed??  
>

---

### 109. Re: [DSP-93:888] Re: pdf manuals in dsp93/manuals

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 22 Jun 1995 14:44:34 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac0f77e343ba@[204.181.160.84]>  
Rendered body type: text/plain

>Thanks Ron - I'll look them over...could be I did it wrong...although they  
>show up on my system.

>  
>Greg  
>

Greg,

What is the format of AcroRead.mac on ftp.tapr.org??

What version of the Acrobat reader are you using?

I thought the idea behind Acrobat was to eliminate problems with fonts, etc. Something is turning font substitution off, which is probably why the section hraders show only their underline and not the text. Any ideas?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 110. Re: [DSP-93:888] Re: pdf manuals in dsp93/manuals

From: Bob Smith <rsmith@internetMCI.COM>  
Date: Thu, 22 Jun 1995 16:18:07 -0500  
To: Greg Jones <gjones@tenet.edu>, "dsp-93@tapr.org" <dsp-93@tapr.org>  
Message-ID: <01HS0GZEZ8CY8WWHIN@MAILSRV1.PCY.MCI.NET>  
Rendered body type: text/plain

-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --

They work fine for me under windoze Greg! Thanks - I've been waiting with baited anticipation for mine - this gives me a chance to get the feel prior to the kits arrival.

Love your work babe.

----- REPLY, Original message follows -----

Date: Thursday, 22-Jun-95 01:26 PM

From: Greg Jones                    \ Internet:    (gjones@tenet.edu)  
To:    dsp-93@tapr.org            \ Internet:    (dsp-93@tapr.org)

Subject: [DSP-93:888] Re: pdf manuals in dsp93/manuals

Thanks Ron - I'll look them over...could be I did it wrong...although they show up on my system.

Greg

According to Ronald G. Parsons:

>  
> I am getting unacceptable results with the pdf manuals in dsp93/manuals.  
>  
> I am opening them with Acrobat Reader 2.0.1 (Macintosh).  
>  
> The headers are shown as horizontal lines.  
>  
> I get a Postscript error if I try to print.  
>  
> The file AcroRead.mac in the utils directory is in unknown format (it won't  
> execute, abd Stuffit Expander doesn't recognize it)  
>  
> Help!  
>  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

----- REPLY, End of original message -----

---

## 111. Re: [DSP-93:878] Re: [DSP93DEV:1417] housecleaning

From: "Lawrence F. Johnston" <ljohnsto@carbon.cudenver.edu>  
Date: Thu, 22 Jun 1995 14:31:18 -0600 (MDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.OSF.3.91.950622142923.17916C-100000@carbon.cudenver.edu>  
Rendered body type: text/plain

I downloaded the manuals, but I'm not familiar with the "pdf" format. I looked in the directories with the manual files and in the directories above it, but I can't locate what files I need to read the manuals using Windows PC.

Can you tell me the name of the files I need and their possible location?

Thank.

Larry, W0EIE

---

### 112. Re: [DSP-93:888] Re: pdf manuals in dsp93/manuals

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 22 Jun 1995 15:37:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac0f81ac2f8d@[204.96.0.71]>  
Rendered body type: text/plain

>Thanks Ron - I'll look them over...could be I did it wrong...although they  
>show up on my system.  
>  
>Greg

Ok. got it to work. After re-installing Acrobat Reader several times (every time you change your font population, Acrobat Reader wants to be re-installed). Seems the OpsManual wanted, no demanded, a Type 1 font for Times-Bold. It still wants a Type 1 font Swing-Bold and "can't create the font Insignia".

Page 1 won't print (probably that cutesy DSP-93 logo (Swing? Insignia?))

I still think that something is wrong with this picture? ATM is still getting an error -20.

But things have improved.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 113. Re: [DSP-93:893] Re: [DSP93DEV:1417] housecleaning

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 22 Jun 1995 16:02:48 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac0f8abe9c2c@[204.96.0.109]>  
Rendered body type: text/plain

>I downloaded the manuals, but I'm not familiar with the  
>"pdf" format. I looked in the directories with the  
>>manual files and in the directories above it, but I can't  
>locate what files I need to read the manuals using Windows PC.  
>  
>Can you tell me the name of the files I need and their  
>possible location?  
>  
>Thank.  
>  
>Larry, W0EIE

The reader is in tapr/utils and named ACROREAD.EXE.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 114. Re: [DSP-93:891] Re: pdf manuals in dsp93/manuals

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 22 Jun 1995 17:10:38 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506222210.RAA16426@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

It should be version 2.0...which is what I am using. I got that software off the Adobe system and off another system and they were the same.

Are you using 2.0 ?

I probably just didn't upload them correctly.

I uploaded them in binary format. Direct ftp from another unix site. didn't go through my mac.

Greg

According to Ronald G. Parsons:

```
>
> >Thanks Ron - I'll look them over...could be I did it wrong...although they
> >show up on my system.
> >
> >Greg
> >
>
> Greg,
>
> What is the format of AcroRead.mac on ftp.tapr.org??
>
> What version of the Acrobat reader are you using?
>
> I thought the idea behind Acrobat was to eliminate problems with fonts,
> etc. Something is turning font substitution off, which is probably why the
> section hraders show only their underline and not the text. Any ideas?
>
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>
```

---

## 115. Re: [DSP-93:888] Re: pdf manuals in dsp93/manuals

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 22 Jun 1995 17:12:23 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199506222212.RAA16669@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Thanks Bob. I am heading to Denton this weekend and kits are arriving from Tucson Friday. With luck we will begin to ship kits first of next week.

Cheers - Greg

According to Bob Smith:

```
>
> -- [From: Bob Smith * EMC.Ver #b.2.5.02] --
>
> They work fine for me under windoze Greg! Thanks - I've been waiting with
> baited anticipation for mine - this gives me a chance to get the feel prior
> to the kits arrival.
>
> Love your work babe.
>
>
> ----- REPLY, Original message follows -----
>
> Date: Thursday, 22-Jun-95 01:26 PM
>
> From: Greg Jones \ Internet: (gjones@tenet.edu)
> To: dsp-93@tapr.org \ Internet: (dsp-93@tapr.org)
>
> Subject: [DSP-93:888] Re: pdf manuals in dsp93/manuals
>
> Thanks Ron - I'll look them over...could be I did it wrong...although they
> show up on my system.
>
> Greg
>
> According to Ronald G. Parsons:
> >
> > I am getting unacceptable results with the pdf manuals in dsp93/manuals.
> >
> > I am opening them with Acrobat Reader 2.0.1 (Macintosh).
> >
> > The headers are shown as horizontal lines.
> >
> > I get a Postscript error if I try to print.
> >
> > The file AcroRead.mac in the utils directory is in unknown format (it
> won't
```

```
> > execute, abd Stuffit Expander doesn't recognize it)
> >
> > Help!
> >
> > Ron W5RKN
> >
> > also:
> > w5rkn@amsat.org
> >
> >
> >
>
> ----- REPLY, End of original message -----
>
>
>
```

---

## 116. Re: [DSP-93:894] Re: pdf manuals in dsp93/manuals

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 22 Jun 1995 17:15:59 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506222216.RAA17080@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Okay. I probaby should call Adobe and find out what the upgrade is to the distiller I have. That probably would make all the difference. Will put it on my list of things to do.

As with any first time project...if it is worth doing -- it is worth doing badly the first time :-) as an old prf of mine use to say. We will get the bugs worked out eventually and then we will have some good information available.

Have you looked at the other manuals in the info/kits area. That use more standard fonts.

On the fonts -- I typically just get an error BBox (or something like that) and it subsitutes a font.

What version of ATM are you using ? I have 3.8.? whatever -- works nicely.

Greg

According to Ronald G. Parsons:

```
>
> >Thanks Ron - I'll look them over...could be I did it wrong...although they
> >show up on my system.
> >
> >Greg
>
> Ok. got it to work. After re-installing Acrobat Reader several times (every
> time you change your font population, Acrobat Reader wants to be
> re-installed). Seems the OpsManual wanted, no demanded, a Type 1 font for
> Times-Bold. It still wants a Type 1 font Swing-Bold and "can't create the
> font Insignia".
>
> Page 1 won't print (probably that cutesy DSP-93 logo (Swing? Insignia?)
>
> I still think that something is wrong with this picture? ATM is still
> getting an error -20.
>
> But things have improved.
>
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>
```

---

## 117. Re: [DSP-93:893] Re: [DSP93DEV:1417] housecleaning

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 22 Jun 1995 17:17:04 -0500 (CDT)  
To: dsp-93@tapr.org

Message-ID: <199506222217.RAA17193@Leslie-Francis.tenet.edu>

Rendered body type: text/plain

Paul posted the adboe ftp location -- that is the best place. I uploaded the same files in the tapr/utlis

Forgive the lack of readme files -- I did this as a test and they have been popular than I thought they would be. We still have some work to do on them. The goal was to make these files available as part of our web pages.

greg

According to Lawrence F. Johnston:

>  
> I downloaded the manuals, but I'm not familiar with the  
> "pdf" format. I looked in the directories with the  
> manual files and in the directories above it, but I can't  
> locate what files I need to read the manuals using Windows PC.  
>  
> Can you tell me the name of the files I need and their  
> possible location?  
>  
> Thank.  
>  
> Larry, W0EIE  
>  
>

---

### 118. Re: [DSP-93:891] Re: pdf manuals in dsp93/manuals

From: Roy Welch <rdw@crl.com>  
Date: Thu, 22 Jun 1995 15:34:38 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950622153359.2653A-100000@crl.crl.com>  
Rendered body type: text/plain

I downloaded ACROREAD.EXE here and the fonts seem fine here.

73, Roy

---

### 119. Re: [DSP-93:896] Re: pdf manuals in dsp93/manuals

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 22 Jun 1995 21:15:31 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac0fd2cb5773@[204.96.0.109]>  
Rendered body type: text/plain

Grag,

>It should be version 2.0...which is what I am using. I got that software  
>off the Adobe system and off another system and they were the same.  
>  
>Are you using 2.0 ?

I am using 2.0.1 off the Apple Developer CD-ROM.

>I probably just didn't upload them correctly.  
>

>I uploaded them in binary format. Direct ftp from another unix site.  
>didn't go through my mac.

They should have been uploaded as an .hqx file so the Mac attributes were preserved.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 120. Re: [DSP-93:898] Re: pdf manuals in dsp93/manuals

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Thu, 22 Jun 1995 21:15:35 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac0fd35c7995@[204.96.0.109]>  
Rendered body type: text/plain

Greg,



>As with any first time project...if it is worth doing -- it is worth doing  
>badly the first time :-)

I agree.

>What version of ATM are you using ? I have 3.8.? whatever -- works nicely.

3.8.2 off the Apple CD-ROM

>> It still wants a Type 1 font Swing-Bold and "can't create the  
>> font Insignia".

What are these fonts? They were not in my original Ops Man.

>> I still think that something is wrong with this picture? ATM is still  
>> getting an error -20.

This is the only current problem. But it's a major problem.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 121. Re: [DSP-93:902] Re: pdf manuals in dsp93/manuals

From: Roy Welch <rdw@crl.com>  
Date: Thu, 22 Jun 1995 20:40:51 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950622203939.17291A-100000@crl2.crl.com>  
Rendered body type: text/plain

On Thu, 22 Jun 1995, Ronald G. Parsons wrote:

> >> It still wants a Type 1 font Swing-Bold and "can't create the  
> >> font Insignia".

>

> What are these fonts? They were not in my original Ops Man.

I get a message about this also, but don't know what it means.

73, Roy

---

## 122. Re: [DSP-93:901] Re: pdf manuals in dsp93/manuals

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 23 Jun 1995 00:49:41 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506230549.AAA26180@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Why don't you upload the one you have.

greg

According to Ronald G. Parsons:

>

> Grag,

>

> >It should be version 2.0...which is what I am using. I got that software  
> >off the Adobe system and off another system and they were the same.

>

> >Are you using 2.0 ?

>

> I am using 2.0.1 off the Apple Developer CD-ROM.

>

> >I probably just didn't upload them correctly.

>

> >I uploaded them in binary format. Direct ftp from another unix site.

> >didn't go through my mac.

>

> They should have been uploaded as an .hqx file so the Mac attributes were  
> preserved.

>

>

> Ron W5RKN

>

> also:

> w5rkn@amsat.org  
>  
>  
>

---

## 123. Re: [DSP-93:902] Re: pdf manuals in dsp93/manuals

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 23 Jun 1995 00:51:16 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506230551.AAA26231@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to Ronald G. Parsons:

> >> It still wants a Type 1 font Swing-Bold and "can't create the  
> >> font Insignia".  
>  
> What are these fonts? They were not in my original Ops Man.

The TAPR logo and address is in Insignia. Swing-Bold is the DSP-93 logo.  
No biggies.

Greg

---

## 124. More HF Modem Feedback

From: w6shp@amsat.org (Howard Sodja)  
Date: Thu, 22 Jun 1995 23:12:01 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506230611.XAA16839@hopf.dnai.com>  
Rendered body type: text/plain

Hello Dave,

Thanks for the fast reply. I'll check out the AIO options you discussed this weekend. The scope may be the answer to your negative S-meter as the scope should show a signal before the S-meter or your ears do. I'll confirm that once I am familiar with your program and have a few hours putting it through it's paces.

Unshift on space is a good option, but please make it an option, as well as adding the force numbers and force letters commands. In general ham QSO use the unshift on space is great. But there are times when this is a problem. I got my PK-232 soon after it first came out, and the early EPROMs had unshift on space only. I found that some commercial RTTY stations and AO-13 telemetry send a series of numbers with spaces interspersed. I had to plead to and write the AEA gang to get them to change the next EPROM so that unshift on space could be disabled, and numbers or letters shift forced with the L and N commands.

As for the command issue, my remarks were just one suggestion that came to mind because of my experience with the PK-232. A quick fix for now could just be a simple acknowledgment string. A simple "OK" after a command is entered and acted on would be reassuring.

I will dust off ProComm, which I stopped using when I got LanLink running on my PK-232. I set up a lot of batch files for every conceivable mode for the PK-232, so I will now do the same for your modem. Then I'll assign them to Procomm's hot keys. Your command structure will be better than the PK-232's as no delay between commands will be needed. Then I'll simply put "M" as the first command in the batch file. This should resolve the problems I am having with your command structure, and make changing modes as easy as it was with my PK-232.

Thanks again for all your work. 73.

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 125. Acrobat going

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 23 Jun 1995 12:28:43 +0000  
To: dsp-93@tapr.org  
Message-ID: <9506231223.AA22015@camel.campbell.edu>  
Rendered body type: text/plain

I got the Acrobat going on Win95. The short must have been between the ears, or I got a bad download. Anyhow, I ftp'd the file from adobe directly

and it installed.

I too get the mention that it doesn't like the Swing-bold. Another thing is that the address of Tapr doesn't print. All but the first letter appears on screen, but none of it prints. Weird.

Mark L. Hammond [KC4EBR]

---

## 126. Acrobat or Isn't the Web wonderful

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 23 Jun 1995 16:03:37 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac10c94f29c1@[204.96.0.107]>  
Rendered body type: text/plain

As I had mentioned, I was having trouble with Mac Acrobat Reader giving an ATM -20 error which turned off print substitution.

Guessed <http://www.adobe.com/> and found a Tech Note Web page for Adobe products. Looked up Acrobat and there were 2 notes, one on the -20 error. Followed those instructions, then lost background printing in Acrobat. Read the second note where that problem was discussed and now all problems are gone.

Bottom line for you Mac users, unless you have QuickDraw GX installed, stick with Acrobat Reader 2.0.

The best place to get the Acrobat Readers is from <ftp.adobe.com>. They have the latest stuff, and all the readme notes to go with them.

Greg,

I'd suggest not having the readers on <ftp.tapr.org> as you will never keep up-to-date. Just have a note telling about Adobe's ftp site.

Ron W5RKN

also:  
[w5rkn@amsat.org](mailto:w5rkn@amsat.org)

---

## 127. Re: [DSP-93:908] Acrobat or Isn't the Web wonderful

From: Greg Jones <gjones@tenet.edu>  
Date: Sat, 24 Jun 1995 00:03:20 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506240503.AAA16025@beall.tenet.edu>  
Rendered body type: text/plain

Thanks for the notes Ron.

I wanted to have the readers available on TAPR for those with just ftp access...I had planned on the Web pages to link to the Adobe area.

---

Just for the group - I am in the TAPR office currently and just got finished doing preliminary work on 60 of the kits. I go to Dallas tomorrow to visit Bob and pickup the EPROMs (latest and greatest). Monday or Tuesday should see the first kits going out. We might wait till Tuesday to see if UPS comes up with the misplaced SRAM from Calif so we can ship those with the kits.

There will be one or two small parts shipping with the cable. What those are depends on where you are in the shipping. Stay tuned.

More as things progress. Feel good though - getting close to having another bunch of folks on the air with DSP-93 units.

Cheers - Greg

P.S. We still have 30 units available for sale in this batch...so tell your friends they can order now and get it right now. No waiting for the next batch.

According to Ronald G. Parsons:

>

> As I had mentioned, I was having trouble with Mac Acrobat Reader giving an

> ATM -20 error which turned off print substitution.  
>  
> Guessed <http://www.adobe.com/> and found a Tech Note Web page for Adobe  
> products. Looked up Acrobat and there were 2 notes, one on the -20 error.  
> Followed those instructions, then lost background printing in Acrobat. Read  
> the second note where that problem was discussed and now all problems are  
> gone.  
>  
> Bottom line for you Mac users, unless you have QuickDraw GX installed,  
> stick with Acrobat Reader 2.0.  
>  
> The best place to get the Acrobat Readers is from <ftp.adobe.com>. They have  
> the latest stuff, and all the readme notes to go with them.  
>  
> Greg,  
>  
> I'd suggest not having the readers on <ftp.tapr.org> as you will never keep  
> up-to-date. Just have a note telling about Adobe's ftp site.  
>  
>  
> Ron W5RKN  
>  
> also:  
> [w5rkn@amsat.org](mailto:w5rkn@amsat.org)  
>  
>  
>

---

## 128. Re: [DSP-93:909] Re: Acrobat or Isn't the Web wonderful

From: [rparsons@bga.com](mailto:rparsons@bga.com) (Ronald G. Parsons)  
Date: Sat, 24 Jun 1995 06:59:07 -0500  
To: [dsp-93@tapr.org](mailto:dsp-93@tapr.org)  
Message-ID: <[v02120d01ac11ae4de6c1@\[204.181.160.4\]](mailto:v02120d01ac11ae4de6c1@[204.181.160.4])>  
Rendered body type: text/plain

>Thanks for the notes Ron.  
>  
>I wanted to have the readers available on TAPR for those with just ftp  
>access...I had planned on the Web pages to link to the Adobe area.  
>  
But it's on <ftp.adobe.com>

Ron W5RKN

also:  
[w5rkn@amsat.org](mailto:w5rkn@amsat.org)

---

## 129. Re: [DSP-93:885] Re: HF modem feedback

From: [w6shp@amsat.org](mailto:w6shp@amsat.org) (Howard Sodja)  
Date: Sat, 24 Jun 1995 08:28:00 -0700  
To: [dsp-93@tapr.org](mailto:dsp-93@tapr.org)  
Message-ID: <[199506241527.IAA10757@hopf.dnai.com](mailto:199506241527.IAA10757@hopf.dnai.com)>  
Rendered body type: text/plain

Hello Dave,

I just copied W1AW's RTTY and AMTOR bulletins with your modem program and my scope, per, I believe, your instructions:

>  
>The "AIO output" is a direct connection to the D/A converter. There is  
>a header pin inside the unit for that which I normally use; however,  
>there are provisions to short the coupling capacitor between that and  
>the output pin on the DIN connector. An ordinary header jumper could  
>be used to short that capacitor, in which case the scope could be  
>connected directly to the DIN connector. Unfortunately, the level there  
>would probably be too high for a mike connection, since the output pot  
>would have to be turned way up.

>From the above, I figured you meant jumper JP209. I got a sine wave that  
was in sync with W1AW's keying, but I do not know how to use this for  
tuning. Once the sine wave is tuned for max peak-peak, tuning back and  
forth I could tune out of the area where I printed W1AW. So it appears I do  
not tune for maximum wave. The frequency of the wave varies, but trying to  
determine the wave frequency on the scope is harder than tuning with the  
LED's, where I try to get the DCD mark/space LEDs 5/6 to flicker.

Another point of confusion was your previous remark to use a DC coupled  
scope. The wave form that I saw is the same no matter which JP209 pin I

tap, even though one is DC coupled to the D/A converter, and the other pin has a capacitor between the it and the other pin. Furthermore, I see no difference between this wave form and the one I got from the speaker output, which you said should not be used.

The final point of confusion is how this relates to the mic connection, as the mic would be in the output and the received signal the input data stream. As you say your modem can be used full duplex, how could the received signal level effect the transmitted signal to the mic connector.

The only conclusion I can come to from all of the above is that I have the wrong header connected to my scope. What header do you mean? And what should I see and what do I tune for?

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

### 130. Re: [DSP-93:880] DSP-93 audio test file

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 24 Jun 1995 16:35:19 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac122e990527@[204.96.0.72]>  
Rendered body type: text/plain

>I have placed in the Upload area a PC WAV file to use with the DSP-93  
>for 1200 Baud Packet testing. The File is called PKT1200.ZIP  
>I got this from a Ham archive. I had no problem playing back this PC  
>Sound format WAV sound on my Mac using "SoundAPP"  
>  
>I would thing that the other DSP-93 modes could also have test sounds files.  
>This way we would be testing with the same data.  
>  
>Bob KC5EJK Dallas kc5ejk@onramp.net

I have a number of 2 minute, 16 bit, 44kHz sound samples from K0-22, 23, and 25. They are big -- about 10 Mb each. They don't compress significantly.

If someone wants one or more, contact me about format and method of transfer.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 131. Manual Text

From: ljs@west.net (L.J.Shepherd)  
Date: Sat, 24 Jun 1995 16:21:45 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506242322.QAA15349@acme.sb.west.net>  
Rendered body type: text/plain

Hello Ron and Group:

Just downloaded the "PDF" files, wandered around the Adobe ftp site, downloaded a file that did not turn out to be a reader and am now wondering if it would be very much trouble to provide the MANUALS in a text format that does not require a "special" reader. There was an index on ADOBE that was over 1.4 mB in length that may have contained the reader necessary but I am wondering why it is really necessary to have to work this hard to have the benefit of the MANUALS.

I would be pleased to upload the MANUALS to the satellites if some kind person would provide me with a nice simple text file for that purpose that I can just ZIP and upload.

Thanks, Jim K6OYY

Also: thanks to the person who forwarded the info necessary to get back on the SIG via my new internet provider.....it's appreciated !

---

### 132. Re: [DSP-93:913] Manual Text

From: Greg Jones <gjones@tenet.edu>  
Date: Sat, 24 Jun 1995 18:51:04 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506242351.SAA08225@Alice-Thurman.tenet.edu>

Rendered body type: text/plain

Real printed manuals come with all the kits :-)

The pdf files were an experiment, which have caused a lot more activity than I thought they would. I would have spent a lot more time testing the formats and stuff ahead of time - if I had ever imagined the amount of interest in the manuals.

The purpose of the pdf files were to allow those interested in seeing what the actual printed manuals that go with the kit look like.

The readers are available on ftp.tapr.org, the readers are BIG as you have mentioned.

A simple text file is impossible to generate -- graphics are a major portion of the manuals. Although we could move the Operations Manual and upcoming Development Guide (in word) into the area as well. I'll get tiwht ROn on this.

You'll just have to standby for the printed manuals with the kits.

Cheers - Greg

According to L.J.Shepherd:

```
>
> Hello Ron and Group:
> Just downloaded the "PDF" files, wandered around the Adobe
> ftp site, downloaded a file that did not turn out to be a reader and am now
> wondering if it would be very much trouble to provide the MANUALS in a text
> format that does not require a "special" reader. There was an index on ADOBE
> that was over 1.4 mB in length that may have contained the reader necessary
> but I am wondering why it is really necessary to have to work this hard to
> have the benefit of the MANUALS.
> I would be pleased to upload the MANUALS to the satellites
> if some kind person would provide me with a nice simple text file for that
> purpose that I can just ZIP and upload.
> Thanks, Jim K6OYY
>
> Also: thanks to the person who forwarded the info necessary to get back on
> the SIG via my new internet provider.....it's appreciated !
>
>
```

---

### 133. Re: [DSP-93:913] Manual Text

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 24 Jun 1995 19:51:21 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac1261d30e6b@[204.96.0.71]>  
Rendered body type: text/plain

```
>Hello Ron and Group:
> Just downloaded the "PDF" files, wandered around the Adobe
>ftp site, downloaded a file that did not turn out to be a reader and am now
>wondering if it would be very much trouble to provide the MANUALS in a text
>format that does not require a "special" reader. There was an index on ADOBE
>that was over 1.4 mB in length that may have contained the reader necessary
>but I am wondering why it is really necessary to have to work this hard to
>have the benefit of the MANUALS.
> I would be pleased to upload the MANUALS to the satellites
>if some kind person would provide me with a nice simple text file for that
>purpose that I can just ZIP and upload.
> Thanks, Jim K6OYY
>
>Also: thanks to the person who forwarded the info necessary to get back on
>the SIG via my new internet provider.....it's appreciated !
```

To amplify on what Greg said, a simple ASCII file is not suitable to present the required information. pdf files really do provide a very nice solution, one you get the readers installed and working. Unfortunately, there is no one display program that everyone has that will do the required job. That's where Acrobat Reader really helps. It's free, and has implementations both for Mac and Wintel systems.

Did you download the reader ACR0READ.EXE from ftp.tapr.org in /tapr/utlis?

Or did you get acroread.exe of ftp.adobe.com in /pub/adobe/Applications/Acrobat/Windows. Its 1405k and worth every byte.

Mark and others have reported success.

Let's not give up on pdf until someone comes up with a common, free substitute.

Any suggestions.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 134. Re: [DSP-93:911] Re: HF modem feedback

From: Mills@huey.udel.edu  
Date: Sat, 24 Jun 95 22:24:56 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9506242224.aa23288@huey.udel.edu>  
Rendered body type: text/plain

Howard,

First, thanks for your patience in this thing. I find joy of DC from JP211, pin furthest from the regulators. For some signals a DC coupling is not necessary; however, it is most useful with the d5 command, which watches the detector output. It should show a triangular wave in step with the FSK (baseband) modulation. When properly tuned, the wave should straddle the scop zero baseline - you should see it shift slightly up or down as you tune back and forth, but a few tens of Hz mistune will probably be enough to produce poor copy - as I said, this thing is razor sharp.

On the d5 display, note the negative-going blips, which are synthesized in synchronism with the bit sample clock. The blips should be at or very near the peaks of the waveform. You should see one large positive-going blip (blap?) at the beginning (start bit) of each RTTY or SITOR character. This is to synchronize your scope so you can see the character exactly as the decoders see it. The signal with the blips and the blaps is what produces the motorboat sound from the speaker. I find that, with a little bit of practice, I don't need the scope and can tune with only the LEDs and motorboat, which is actually rather nice, leaving my eyes free to watch other meters.

You are correct in that the default configuration is the receiver output to the DSP-93 input A/D converter and output D/A converter to the mic input of the transmitter, just like in ordinary AFSK operation. In half-duplex modes, the default connection in receive is to connect the received ASCII output to the transmitter ASCII input, which is what you want for a regenerator (D/A output connected to an external TNC). Sorry if that is confusing. In transmit half-duplex mode, I prefer to monitor the transmit signal as far toward the antenna as possible, in this case, the AFSK output is internally looped to the AFSK input. Other forms of loopback and also full duplex mode can be selected as described in the readme file.

Each time I fine-tune the decoder algorithms, I find something I don't like. I am not altogether happy with the performance of the rig when it comes to really grovelling in the mud. I found the problem due to sloppy treatment of absolute thresholds. I have recoded using variable thresholds, which seems to have fixed the problem. I also put in unshift-on-space for both transmit and receive (separately enabled). I'll post the latest when the paint is dry.

There was a suggestion that a scope could be used to tune the thing if the signal can't be found by ear. It's really hard to find by scope, too. I can in fact watch the integrated sync pulse, which is coherently integrated over 70 bits, and tell by the wiggle of the sidelobes that the PLL has found the phase. However, at the lowest level I can get both bit and character lock, the decoded character stream is pretty noisy. I have this uneasy feeling about trying a QSO near the decoder threshold and having to slowly tune the receiver in 10-Hz intervals until the sync pulse pops out of the noise.

Dave

---

### 135. Re: [DSP-93:914] Re: Manual Text

From: ljs@west.net (L.J.Shepherd)  
Date: Sat, 24 Jun 1995 22:42:41 -0700  
To: dsp-93@tapr.org

Message-ID: <199506250542.WAA20636@acme.sb.west.net>  
Rendered body type: text/plain

Hi Greg: Thanks for the response.....does your comment mean that all kit owner's will be sent copies of the new printed manuals ?  
73, Jim K60YY

>Real printed manuals come with all the kits :-)  
>  
>The pdf files were an experiment, which have caused a lot more activity than  
>I thought they would. I would have spent a lot more time testing the  
>formats and stuff ahead of time - if I had ever imagined the amount of  
>interest in the manuals.  
>  
>The purpose of the pdf files were to allow those interested in seeing what  
>the actual printed manuals that go with the kit look like.  
>  
>The readers are available on ftp.tapr.org, the readers are BIG as  
>you have mentioned.  
>  
>A simple text file is impossible to generate -- graphics are a major  
>portion of the manuals. Although we could move the Operations Manual and  
>upcoming Development Guide (in word) into the area as well. I'll get tiwht  
>ROn on this.  
>  
>You'll just have to standby for the printed manuals with the kits.  
>  
>Cheers - Greg  
>  
>According to L.J.Shepherd:  
>>  
>> Hello Ron and Group:  
>> Just downloaded the "PDF" files, wandered around the Adobe  
>> ftp site, downloaded a file that did not turn out to be a reader and am now  
>> wondering if it would be very much trouble to provide the MANUALS in a text  
>> format that does not require a "special" reader. There was an index on ADOBE  
>> that was over 1.4 mB in length that may have contained the reader necessary  
>> but I am wondering why it is really necessary to have to work this hard to  
>> have the benefit of the MANUALS.  
>> I would be pleased to upload the MANUALS to the satellites  
>> if some kind person would provide me with a nice simple text file for that  
>> purpose that I can just ZIP and upload.  
>> Thanks, Jim K60YY  
>>  
>> Also: thanks to the person who forwarded the info necessary to get back on  
>> the SIG via my new internet provider.....it's appreciated !  
>>  
>>  
>  
>  
>

---

### 136. Re: [DSP-93:917] Re: Manual Text

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 25 Jun 1995 01:33:26 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506250633.BAA14808@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

Old kit owners will not need the new assembly manual -- not much changed, except for changes to help the builder.

The new Operations Manual and Developers Manuals are being provided on the ftp.tapr.org site in both MS-Word and pdf files. Either format should allow past kit purchasers to get the documentation.

I'll get with Ron and we will move the Word version of the files over this next week.

If you require printed copies of the new manuals -- send a request to TAPR@TAPR.ORG. I'll have to get with Dorothy to find out what the cost of printing and postage will be. We'll have to charge for at least those to break even.

Only the new Operations Manual is being provided in this batch of kits. The new Developers Guide is not expected out (in print format) until after these kits are shipped.



```
> According to L.J.Shepherd:
>
> Hi Greg: Thanks for the response.....does your comment mean that all kit
> owner's will be sent copies of the new printed manuals ?
73, Jim K6OYY
>
>
>
>>Real printed manuals come with all the kits :-)
>
>
>>The pdf files were an experiment, which have caused a lot more activity than
>>I thought they would. I would have spent a lot more time testing the
>>formats and stuff ahead of time - if I had ever imagined the amount of
>>interest in the manuals.
>
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>>The purpose of the pdf files were to allow those interested in seeing what
>>the actual printed manuals that go with the kit look like.
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>>The readers are available on ftp.tapr.org, the readers are BIG as
>>you have mentioned.
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>
>>A simple text file is impossible to generate -- graphics are a major
>>portion of the manuals. Although we could move the Operations Manual and
>>upcoming Development Guide (in word) into the area as well. I'll get tiwht
>>ROn on this.
>
>
>>You'll just have to standby for the printed manuals with the kits.
>
>
>>Cheers - Greg
>
>
>>According to L.J.Shepherd:
>>
>> Hello Ron and Group:
>> Just downloaded the "PDF" files, wandered around the Adobe
>> ftp site, downloaded a file that did not turn out to be a reader and am now
>> wondering if it would be very much trouble to provide the MANUALS in a text
>> format that does not require a "special" reader. There was an index on ADOBE
>> that was over 1.4 mB in length that may have contained the reader necessary
>> but I am wondering why it is really necessary to have to work this hard to
>> have the benefit of the MANUALS.
>> I would be pleased to upload the MANUALS to the satellites
>> if some kind person would provide me with a nice simple text file for that
>> purpose that I can just ZIP and upload.
>> Thanks, Jim K6OYY
>>
>> Also: thanks to the person who forwarded the info necessary to get back on
>> the SIG via my new internet provider.....it's appreciated !
```

From: dmedley@indirect.com (David Medley)  
Date: Sun, 25 Jun 1995 11:21:56 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506251821.LAA01988@bud.indirect.com>  
Rendered body type: text/plain

1. Is there any (other) way those of us who have already built the DSP to get fancy printed manuals?
2. Why couldn't the manual have been with 'Word' which most of us have and at least partly understand? Word handles graphics quite well I am told, although I have never tried this feature. I used Word Perfect for many years but recently switched to Word as most of the files I was getting (including from TAPR) were in that format.

Page 457

## 138. Modem Speed

From: dmedley@indirect.com (David Medley)  
Date: Sun, 25 Jun 1995 11:23:57 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506251823.LAA02173@bud.indirect.com>  
Rendered body type: text/plain

This is really directed at Ron Parsons.

I am still perplexed with the speed question I asked a while back. My TNC is an MFJ1274 and it has in the rear an 8 pole dipswitch. Switches 1-5 set the port speed to the computer and I quite understand that this has nothing to do with the radio speed so long as it is equal to or greater. Switches 6-8 set the radio(input) speed and according to the manual you have only three choices, 300,1200 ,9600.

Therefore it is quite evident that you can leave the port speed set at 9600 but the last three dips must be set to the actual radio speed so I have to change these switches to go from the 1200 baud microsats to the 9600 baud uosats. To further add to my confusion, the Fast Set Up manual which also came with the TNC says that the choices available on switches 6-8 are 300, 1200, ext modem(I think this has something to do with the other connector on the rear of the TNC?). With my system, with the DSP running on packet or the 1200 baud microsats, the only setting that will work is the 1200 baud setting. As I said before changing these dips all the time gets old pretty quickly!! Am I missing something here? Perhaps there is some mod I need to make to the TNC? BTW a new sig has just started TNC-SIG and I have joined that already. I got a fast answer to my question as to how to make my 1274 run with a port speed of 19.2kbs.

Dave KI6QE

---

## 139. Re: [DSP-93:920] Modem Speed

From: Roy Welch <rdw@crl.com>  
Date: Sun, 25 Jun 1995 11:45:26 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950625114231.8895C-100000@crl8.crl.com>  
Rendered body type: text/plain

On Sun, 25 Jun 1995, David Medley wrote:

> I got a fast answer to my question as to how to make my 1274 run with a  
> port speed of 19.2kbs.  
> Dave KI6QE

Dave, the port speed mod probably changed all the timing settings also, such as DWAIT, etc. It is a good mod however. I have had it on my TNC2 for several years now.

73, Roy -- W0SL

---

## 140. Re: [DSP-93:919] Manuals

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 25 Jun 1995 14:47:03 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac136bba878a@[204.96.0.76]>  
Rendered body type: text/plain

Dave KI6QE

>I have been following the manual comments especially the one from my old  
>friend Jim Shepherd. I too was perplexed at the apparent complexity of the  
>whole thing and for that reason I have not yet downloaded all the required  
>files until I could get some idea of what I was doing. Maybe I will try  
>tonight.

I am somewhat to "blame" for your complexity worries. Normally it is not that complex. I have been using Acrobat Reader for months. However, due to two factors (unusual fonts in the TAPR manuals, and a bug in the latest Mac version of the reader) I caused a lot of traffic with which I was trying to see how unique my problem was. Once I discovered others weren't having the problem, I began a local investigation to solve MY problems. I did so. Sorry for the confusion.

Don't hold back on trying this rather new and very useful technology, just because I got bit.

> I have two questions:  
> 1. Is there any (other) way those of us who have already built the DSP  
> to get fancy printed manuals?

I think Greg already said that he will set a break-even price for getting new printed manuals from TAPR. However, these manuals are bound to be in flux for some time and if you can print them from the ftp sites, it will be easier to keep up-to-date.

> 2. Why couldn't the manual have been with 'Word' which most of us have  
> and at least partly understand? Word handles graphics quite  
> well I am told, although I have never tried this feature. I used Word  
> Perfect for many years but recently switched to Word as most of the  
> files I was getting (including from TAPR) were in that format.

Again, I believe Greg said it is his desire to have BOTH pdf and Word formats posted. This whole project is only a week or so old. We've learned a lot.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 141. Re: [DSP-93:920] Modem Speed

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 25 Jun 1995 14:51:59 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac136df50d9e@[204.96.0.100]>  
Rendered body type: text/plain

Dave KI6QE

>This is really directed at Ron Parsons.  
...  
>To further add to my confusion, the Fast Set Up manual which also  
>came with the TNC says that the choices available on switches 6-8 are  
>300, 1200, ext modem(I think this has something to do with the other connector  
>on the rear of the TNC?). With my system, with the DSP running on packet  
>or the  
>1200 baud microsats, the only setting that will work is the 1200 baud setting.  
>As I said before changing these dips all the time gets old pretty quickly!!  
>Am I missing something here?

I don't think so. MFJ can never be accused of making their strange manual setup information clear.

I know of no easy way to "automate" the 1200/9600 radio speed with the MFJ modems. If someone else does, please speak up. What if one has a 19.2 external modem attached to the Modem Disc. header?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 142. Re: [DSP-93:919] Manuals

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 25 Jun 1995 15:17:19 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506252017.PAA11212@Alice-Thurman.tenet.edu>  
Rendered body type: text/plain

I posted this last night - here it is again.

Word is not a useful program for doing the types of docs we do these days for the final output. The Assembly Manual has the most images that require this, but the operations guide and developers guide should be at least readable in Word format.

Old kit owners will not need the new assembly manual -- not much changed, except for changes to help the builder.

The new Operations Manual and Developers Manuals are being provided on the ftp.tapr.org site in both MS-Word and pdf files. Either format should allow past kit purchasers to get the documentation.

I'll get with Ron and we will move the Word version of the files over this next week.

If you require printed copies of the new manuals -- send a request to

TAPR@TAPR.ORG. I'll have to get with Dorothy to find out what the cost of printing and postage will be. We'll have to charge for at least those to break even.

Greg

According to David Medley:

```
>
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> friend Jim Shepherd. I too was perplexed at the apparent complexity of the
> whole thing and for that reason I have not yet downloaded all the required
> files until I could get some idea of what I was doing. Maybe I will try
> tonight. I have two questions:
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> to get fancy printed manuals?
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> well I am told, although I have never tried this feature. I used Word
> Perfect for many years but recently switched to Word as most of the
> files I was getting (including from TAPR) were in that format.
> Dave KI6QE
>
>
>
```

---

### 143. Re: [DSP-93:918] Re: Manual Text

From: ljs@west.net (L.J.Shepherd)  
Date: Sun, 25 Jun 1995 13:57:26 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506252057.NAA15782@acme.sb.west.net>  
Rendered body type: text/plain

Greg: Thanks for your help in getting MS Word files transferred over, I will be happy to upload them to the satellites for the benefit of those without internet access if it would be helpful to the effort (I had been forwarding all the Build Updates previously as uploads to K0-23 and 25).  
Ron: I will be happy to try the PDF files. I've looked again for the viewer and didn't seem to find it at the TAPR site in either utilities or the upload section. I'm certainly not opposed to an approach with some useful advantages, I just hate to spend time searching for info (or a reader in this case) without success. Thanks again for your help and a great job in supporting the kit effort ! 73 to both .....Jim K60YY

>Old kit owners will not need the new assembly manual -- not much changed,  
>except for changes to help the builder.

>  
>The new Operations Manual and Developers Manuals are being provided on the  
>ftp.tapr.org site in both MS-Word and pdf files. Either format should allow  
>past kit purchasers to get the documentation.

>  
>I'll get with Ron and we will move the Word version of the files over  
>this next week.

>  
>If you require printed copies of the new manuals -- send a request to  
>TAPR@TAPR.ORG. I'll have to get with Dorothy to find out what the cost of  
>printing and postage will be. We'll have to charge for at least those to break  
>even.

>  
>Only the new Operations Manual is being provided in this batch of kits. The  
>new Developers Guide is not expected out (in print format) until after these  
>kits are shipped.

>  
>Cheers - greg

>  
>According to L.J.Shepherd:

>>  
>> Hi Greg: Thanks for the response.....does your comment mean that all kit  
>> owner's will be sent copies of the new printed manuals ?

>> 73, Jim K60YY  
>>  
>>  
>>

>> >Real printed manuals come with all the kits :-)  
>> >

>> >The pdf files were an experiment, which have caused a lot more activity than  
>> >I thought they would. I would have spent a lot more time testing the  
>> >formats and stuff ahead of time - if I had ever imagined the amount of  
>> >interest in the manuals.  
>> >

```
>> >The purpose of the pdf files were to allow those interested in seeing what
>> >the acutal printed manuals that go with the kit look like.
>> >
>> >The readers are available on ftp.tapr.org, the readers are BIG as
>> >you have mentioned.
>> >
>> >A simple text file is impossible to generate -- graphics are a major
>> >porition of the manuals. Although we could move the Operations Manual and
>> >upcoming Development Guide (in word) into the area as well. I'll get tiwht
>> >R0n on this.
>> >
>> >You'll just have to standby for the printed manuals with the kits.
>> >
>> >Cheers - Greg
>> >
>> >According to L.J.Shepherd:
>> >>
>> >> Hello Ron and Group:
>> >> Just downloaded the "PDF" files, wandered around the
Adobe
>> >> ftp site, downloaded a file that did not turn out to be a reader and
am now
>> >> wondering if it would be very much trouble to provide the MANUALS in a
text
>> >> format that does not require a "special" reader. There was an index on
ADOBE
>> >> that was over 1.4 mB in length that may have contained the reader
necessary
>> >> but I am wondering why it is really necessary to have to work this
hard to
>> >> have the benefit of the MANUALS.
>> >> I would be pleased to upload the MANUALS to the
satellites
>> >> if some kind person would provide me with a nice simple text file for
that
>> >> purpose that I can just ZIP and upload.
>> >> Thanks, Jim K6OYY
>> >>
>> >> Also: thanks to the person who forwarded the info necessary to get
back on
>> >> the SIG via my new internet provider.....it's appreciated !
>> >>
>> >
>> >
>> >
>> >
>> >
```

## 144. Location of pdf readers

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sun, 25 Jun 1995 17:39:08 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac1393cfd30@[204.96.0.100]>  
Rendered body type: text/plain

Jim,

```
>Ron: I will be happy to try the PDF files. I've looked again for the
>viewer and didn't seem to find it at the TAPR site in either utilities or
>the upload section. I'm certainly not opposed to an approach with some
>useful advantages, I just hate to spend time searching for info (or a reader
>in this case) without success. Thanks again for your help and a great job in
>supporting the kit effort ! 73 to both Jim K6OYY
```

These have been listed several times in the past few days but ...

On ftp.tapr.org the file is /tapr/utlils/ACROREAD.EXE for PCs.  
On ftp.tapr.org the file is /tapr/utlils/Acrobat Reader installer.hqx for Mac.

On ftp.adobe.com the file is /pub/adobe/Acrobat/Windows/acroread.exe for PCs.  
On ftp.adobe.com the file is  
/pub/adobe/Acrobat/Macintosh/2.0.1/AcroRead.mac.sit or  
/pub/adobe/Acrobat/Macintosh/2.0r2/AcroRead.sea.bin for Mac  
depending on which version you want.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 145. Re: [DSP-93:925] Re: Manual Text

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 25 Jun 1995 21:54:46 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506260254.VAA12865@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

You have to move up to the TAPR directory /tapr/utills

They are not in the dsp93 area.

Greg

According to L.J.Shepherd:

```
>
> Greg: Thanks for your help in getting MS Word files transferred over, I
> will be happy to upload them to the satellites for the benefit of those
> without internet access if it would be helpful to the effort (I had been
> forwarding all the Build Updates previously as uploads to K0-23 and 25).
> Ron: I will be happy to try the PDF files. I've looked again for the
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> in this case) without success. Thanks again for your help and a great job in
> supporting the kit effort ! 73 to both Jim K6OYY
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> >Old kit owners will not need the new assembly manual -- not much changed,
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> >past kit purchasers to get the documentation.
> >
> >I'll get with Ron and we will move the Word version of the files over
> >this next week.
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> >> Hi Greg: Thanks for the response.....does your comment mean that all kit
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> >> 73, Jim K6OYY
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> >>
> >>
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> >>
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> >> >The readers are available on ftp.tapr.org, the readers are BIG as
> >> >you have mentioned.
> >>
> >> >A simple text file is impossible to generate -- graphics are a major
> >> >portion of the manuals. Although we could move the Operations Manual and
> >> >upcoming Development Guide (in word) into the area as well. I'll get tiwht
```



```

> >Hello Ron and Group:
> > Just downloaded the "PDF" files, wandered around the Adobe
> >ftp site, downloaded a file that did not turn out to be a reader and am now
> >wondering if it would be very much trouble to provide the MANUALS in a text
> >format that does not require a "special" reader. There was an index on ADOBE
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> > I would be pleased to upload the MANUALS to the satellites
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> >purpose that I can just ZIP and upload.
> > Thanks, Jim K60YY
> >
> >Also: thanks to the person who forwarded the info necessary to get back on
> >the SIG via my new internet provider.....it's appreciated !
>
> To amplify on what Greg said, a simple ASCII file is not suitable to
> present the required information. pdf files really do provide a very nice
> solution, one you get the readers installed and working. Unfortunately,
> there is no one display program that everyone has that will do the required
> job. That's where Acrobat Reader really helps. It's free, and has
> implementations both for Mac and Wintel systems.
>
> Did you download the reader ACR0READ.EXE from ftp.tapr.org in /tapr/utlils?
>
> Or did you get acroread.exe of ftp.adobe.com in
> /pub/adobe/Applications/Acrobat/Windows. Its 1405k and worth every byte.
>
> Mark and others have reported success.
>
> Let's not give up on pdf until someone comes up with a common, free substitute.
>
> Any suggestions.
>
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>

```

---

#### 149. Re: [DSP-93:928] NEWAO-13 telem

From: fperkins@onramp.net  
 Date: Mon, 26 Jun 1995 06:33:48 -0500  
 To: dsp-93@tapr.org  
 Message-ID: <199506261133.GAA16953@ns.onramp.net>  
 Rendered body type: text/plain

Hi Dave,

I'll put them up "in the raw" when I get home tonight.

73 Frank WB5IPM

---

#### 150. Re: [DSP-93:928] NEWAO-13 telem

From: rparsons@bga.com (Ronald G. Parsons)  
 Date: Mon, 26 Jun 1995 07:28:42 -0500  
 To: dsp-93@tapr.org  
 Message-ID: <v02120d00ac145751a782@[204.181.160.10]>  
 Rendered body type: text/plain

>Frank I have had no luck unzipping the file you posted. The header does not  
 >look quite right. Could you post the .obj file or even the asm file? ZIP  
 >files seem to give a lot of trouble when transmitted on a network.  
 >Dave KI6QE

I had no trouble unzipping p3c93t.zip, psk93r1k.zip, uo93t.zip.

Are you sure you ftp-ed them in binary mode?

Ron W5RKN

also:  
 w5rkn@amsat.org



## 151. Re: [DSP-93:923] Re: Modem Speed

From: "Paul Beckmann" <paul@eye.psych.umn.edu>  
Date: Mon, 26 Jun 95 08:05:56 CDT  
To: dsp-93@tapr.org  
Message-ID: <9506261305.AA08993@eye.psych.umn.edu>  
Rendered body type: text/plain

Hi, all.

I just was introduced to a little IC, the TI TL601. This little guy is a SPDT switch (analog) that is driven by two-input NAND logic at TTL logic. I'm not familiar with the MFJ and its DIP switches but, it seems to me, that if the signals that are being switched are between +/- 15 V, they can be switched with 5V logic by one or more of these IC's.

Word is that these cost about \$1 each. There are other configurations of this type of switch as well.

Keep in mind that if you are switching TTL-level signals, it is relatively straight-forward to rig up AND gates and front-panel switches to do the job.

-- Paul Beckmann  
wa0rse@amsat.org

---

## 152. Re: [DSP-93:932] Re: NEWAO-13 telem

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 26 Jun 95 09:29:31 -0400  
To: dsp-93@tapr.org  
Message-ID: <9506261329.AA00676@camel.campbell.edu>  
Rendered body type: text/plain

I got all three just peachy on my Windooze Box.

>>Frank I have had no luck unzipping the file you posted. The header does not  
>>look quite right. Could you post the .obj file or even the asm file? ZIP  
>>files seem to give a lot of trouble when transmitted on a network.

>>Dave KI6QE

>

>I had no trouble unzipping p3c93t.zip, psk93r1k.zip, uo93t.zip.

>

>Are you sure you ftp-ed them in binary mode?

>

>

>Ron W5RKN

>

>also:

>w5rkn@amsat.org

-----

Mark L. Hammond, Ph. D. (KC4EBR)  
Campbell University

---

## 153. Re: [DSP-93:933] Re: Modem Speed

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 26 Jun 95 11:24:44 -0400  
To: dsp-93@tapr.org  
Message-ID: <9506261524.AA00241@camel.campbell.edu>  
Rendered body type: text/plain

Any sources for this chip? I might have to give that a try....

>Hi, all.

> I just was introduced to a little IC, the TI TL601. This little guy  
>is a SPDT switch (analog) that is driven by two-input NAND logic at TTL  
>logic. I'm not familiar with the MFJ and its DIP switches but, it seems  
>to me, that if the signals that are being switched are between +/- 15 V,  
>they can be switched with 5V logic by one or more of these IC's.

>

> Word is that these cost about \$1 each. There are other configurations  
>of this type of switch as well.

>

> Keep in mind that if you are switching TTL-level signals, it is relatively  
>straight-forward to rig up AND gates and front-panel switches to do the job.

>

>-- Paul Beckmann

> wa0rse@amsat.org

-----

Mark L. Hammond, Ph. D. (KC4EBR)  
Campbell University

## 154. New Modems

From: dmedley@indirect.com (David Medley)  
Date: Tue, 27 Jun 1995 16:09:31 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506272309.QAA12162@bud.indirect.com>  
Rendered body type: text/plain

Ron I just tried the new PSK modem on PACSAT this morning with good results. The only difference I noticed was that LED 1 blinks from time to time. What does this mean? The locking on seemed to be a little more positive and all in all it worked well. You recall I have been using PSK-9378 but this new one tracked the overhead pass without any problem.

Now I took the big plunge this morning and downloaded the acrobat reader. I can see why you like it but I have a problem with it. When I load it it gives an error message which says "The font 'Swing Bold' contains a bad /BBOX". Furthermore after I load, say the OPS Manual, the small print on the screen is blurry and the print out horrible. I have an HP Deskjet 320 printer and a VGA monitor. I think I will wait for the 'Word' version!!

Dave KI6QE

P.S. This was written on Sunday. My phone (data) line went out just before I was going to send it. Would you believe it is going to take the phone co until Thursday to fix it. Meanwhile I ran some wires and hooked the computer in to the regular voice line so that I could communicate. I subscribe to several news groups and get over 100 messages per day!!

---

## 155. Re: [DSP-93:936] New Modems

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 27 Jun 1995 18:33:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac164570465a@[204.181.160.21]>  
Rendered body type: text/plain

>Ron I just tried the new PSK modem on PACSAT this morning with good results.  
>The only difference I noticed was that LED 1 blinks from time to time. What  
>does this mean? The locking on seemed to be a little more positive and all in  
>all it worked well. You recall I have been using PSK-9378 but this new one  
>tracked the overhead pass without any problem.

Frank should probably take this.

>Now I took the big plunge this morning and downloaded the acrobat reader. I  
>can see why you like it but I have a problem with it. When I load it it  
>gives an error message which says "The font 'Swing Bold' contains a bad  
>/BBOX". Furthermore after I load, say the OPS Manual, the small print on the  
>screen is blurry and the print out horrible. I have an HP Deskjet 320 printer  
>and a VGA monitor. I think I will wait for the 'Word' version!!

I have no experience with the PC version of Acrobat. What have others seen?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 156. Re: [DSP-93:936] PSK Modems

From: fperkins@onramp.net  
Date: Tue, 27 Jun 1995 19:21:06 -0500  
To: dsp-93@tapr.org  
Message-ID: <199506280021.TAA21140@ns.onramp.net>  
Rendered body type: text/plain

Hi David,

LED 1 is the SmartTune indicator, which is intended to help tune a microsat properly. LED 1 blinks when a packet "flag" pattern is detected, but only if the PSK modem is TUNED TO THE MAIN LOBE of the PSK signal.

If you false lock on a PSK sidelobe, LED 1 may blink some, but not at the moment you hear flags being transmitted. The human ear can easily detect the flag sound in a PSK signal, even if the PSK modem is incorrectly locked. While data sorta sounds like a random growl, the packet flags sound like "grrrr". When your PSK modem is correctly locked, LED 1 lights up when you hear the "grrrr" flag pattern in the audio.

Notice the effect next time you use the modem. Some people find the tuning aid useful and it is an exclusive feature of the DSP-93 PSK modems :-).

BTW, the change in the new version of the PSK modem was just to brighten

up LED 1's action, per Mark's request.

73 Frank WB5IPM

---

## 157. Re: [DSP-93:937] Re: New Modems

From: torfinn@spacetec.no (Torfinn Holand)  
Date: Wed, 28 Jun 1995 11:04:48 +0200  
To: dsp-93@tapr.org  
Message-ID: <9506280952.AA25301@jupiter.spacetec.no>  
Rendered body type: text/plain

>>Ron I just tried the new PSK modem on PACSAT this morning with good results.  
>>The only difference I noticed was that LED 1 blinks from time to time. What  
>>does this mean? The locking on seemed to be a little more positive and all in  
>>all it worked well. You recall I have been using PSK-9378 but this new one  
>>tracked the overhead pass without any problem.  
>  
>Frank should probably take this.  
>  
>>Now I took the big plunge this morning and downloaded the acrobat reader. I  
>>can see why you like it but I have a problem with it. When I load it it  
>>gives an error message which says "The font 'Swing Bold' contains a bad  
>>/BBOX". Furthermore after I load, say the OPS Manual, the small print on the  
>>screen is blurry and the print out horrible. I have an HP Deskjet 320 printer  
>>and a VGA monitor. I think I will wait for the 'Word' version!!  
>  
>I have no experience with the PC version of Acrobat. What have others seen?  
>  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org  
>  
>  
>  
>

The PC version of Acrobat works perfectly here. I also got the error message, but both the screen output and printout on a laser printer is just fine.

Torfinn (la7sp@amsat.org)

---

## 158. Re: [DSP-93:939] Re: New Modems

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 28 Jun 1995 07:48:32 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac16ffa2058a@[204.96.0.38]>  
Rendered body type: text/plain

Torfinn  
>  
>The PC version of Acrobat works perfectly here. I also got the error  
>message, but  
>both the screen output and printout on a laser printer is just fine.  
>  
Thanks for the comments.

Mac users also get the bad BBox (thet's the bounding box of the font, by the way). The screen appearance may vary depending on the magnification of the view.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 159. Printing pdf files

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 28 Jun 1995 10:42:50 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac17282577de@[204.96.0.110]>  
Rendered body type: text/plain

I downloaded the Windows version of Acrobat Reader and printed the Ops Manual and compared to output with the one from the Macintosh Acrobat

Reader. I printed them on the same printer (LaserWriter Select 360).

I could not tell the two versions apart. I was very impressed that Adobe could pull something off.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 160. Re: [DSP-93:937] Re: New Modems

From: Carol Byers <crlbyers@garlic.com>  
Date: Wed, 28 Jun 1995 17:02:12 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950628170023.27767A-100000@garlic.com>  
Rendered body type: text/plain

I got the same error message tot, but was able to read it on my svg monitor. Have an HP-560 printer and it printed fine.

Carol, W9HGI

On Tue, 27 Jun 1995, Ronald G. Parsons wrote:

> >Ron I just tried the new PSK modem on PACSAT this morning with good results.  
> >The only difference I noticed was that LED 1 blinks from time to time. What  
> >does this mean? The locking on seemed to be a little more positive and all in  
> >all it worked well. You recall I have been using PSK-9378 but this new one  
> >tracked the overhead pass without any problem.  
>  
> Frank should probably take this.  
>  
> >Now I took the big plunge this morning and downloaded the acrobat reader. I  
> >can see why you like it but I have a problem with it. When I load it it  
> >gives an error message which says "The font 'Swing Bold' contains a bad  
> >/BB0X". Furthermore after I load, say the OPS Manual, the small print on the  
> >screen is blurry and the print out horrible. I have an HP Deskjet 320 printer  
> >and a VGA monitor. I think I will wait for the 'Word' version!!  
>  
> I have no experience with the PC version of Acrobat. What have others seen?  
>  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

---

## 161. Manual

From: dmedley@indirect.com (David Medley)  
Date: Thu, 29 Jun 1995 20:51:05 -0700  
To: DSP-93@tapr.org  
Message-ID: <199506300351.UAA19618@bud.indirect.com>  
Rendered body type: text/plain

Turns out my problem was clogged inkjets in the HP printer. I have not had this printer for very long so have not learned all its quirks yet. Does a nice job for the price (Lasers somewhat out of my league). Have not had time to play much more with the DSP software. Got sidetracked into repairing a couple of old TNC-2s and working on a Hallicrafters SX-62. Wonderful old boatanchor. Anyone out there interested in these things? I have some really old stuff here.  
Dave KI6Qe

---

## 162. Com port conflict resolved!

From: w6shp@amsat.org (Howard Sodja)  
Date: Thu, 29 Jun 1995 22:40:50 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506300540.WAA17719@hopf.dnai.com>  
Rendered body type: text/plain

Hello all,

A month or two ago I wrote about a problem I was having with shared IRQs. I

have all 4 com ports in use, and all my available IRQs are committed, so I share com 3's IRQ for my Trakbox with com 1 for my DSP-93. I reasoned this would be no problem as I never upload to the DSP-93 while the Trakbox is active. But in practice I found that after a pass where the Trakbox was active I could not get the Trakbox to respond, using the Windows d93we.exe interface or Procomm in DOS. I had to reboot every time I wanted access to my DSP-93 after my Trakbox was active.

A couple days ago I quit my Microsat shell program, SatSked, while I had the d93we screen open in a window. I was going to play with the RTTY program, so, as is my habit, I pressed the DSP-93 reset before I rebooted my computer. Surprise! The \* appeared in the d93we window! It was SatSked that was holding com 3 for my Trakbox. Now all I had to do was quit SatSked, load my new DSP-93 program, and start SatSked for the next pass. Not an elegant solution, but it sure beats rebooting my entire computer.

Last night I suddenly recalled that SatSked has a feature that lets you shell to DOS, releasing all SatSked control and memory allocation, so you can run anything you want in DOS. You can assign function keys F1 to F10 to shell to DOS and send any string you want to DOS. So I wrote a series of DOS batch files, one to load each obj mode file to my DSP-93. It works great! Now I never have to leave SatSked to change DSP modes. A mode change is just one function key press away inside SatSked.

I thought I'd share this solution with you all, as I'm sure someone else will face a similar problem down the road.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

## 163. DSP-93 Web Page

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 30 Jun 1995 01:30:42 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199506300630.BAA07794@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

If you haven't checked it -- check out

<http://www.tapr.org/tapr/html/dsp93.html>

Cheers - Greg

---

## 164. Kits

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 30 Jun 1995 01:32:08 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199506300632.BAA04339@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Kits began shipping today (Thur).

Should take about a week (+/- 4th of July) to get a majority of the units out the door.

Cheers - Greg

---

## 165. Re: [DSP-93:944] Com port conflict resolved!

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 30 Jun 1995 13:31:33 +0000  
To: dsp-93@tapr.org  
Message-ID: <9506301324.AA16949@camel.campbell.edu>  
Rendered body type: text/plain

Good work-around, Howard! Ain't .bat files grand?

If you want a "real" solution, I bought a 4 port com port board called 4com from STB. It lets you put all ports on lots of unique IRQs.

With Windows 95, I currently have 5 comports on different IRQs, and share a 6th com port with one IRQ. Works dandy. Board was about \$100 shipped. All four ports are 16550 UARTS.

Anybody know of any relief in site for IRQ limitations? I have used every one from 1-15. I'm out, and have already doubled up on one. Somebody

somewhere was near-sighted again...

>Hello all,  
>  
>A month or two ago I wrote about a problem I was having with shared IRQs. I  
>have all 4 com ports in use, and all my available IRQs are committed, so I  
>share com 3's IRQ for my Trakbox with com 1 for my DSP-93. I reasoned this  
>would be no problem as I never upload to the DSP-93 while the Trakbox is  
>.....>  
>I thought I'd share this solution with you all, as I'm sure someone else  
>will face a similar problem down the road.  
>  
>73  
>Howard Sodja, W6SHP In the SF Bay area  
>AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
>Microsats @ K0-23 and A0-16  
>w6shp@amsat.org  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 166. Re: [DSP-93:946] Kits

From: Mike Blake <mike@Cookie.secapl.com>  
Date: Fri, 30 Jun 1995 09:37:07 -0600 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506301437.AA66745@Cookie.secapl.com>  
Rendered body type: text/plain

>  
> Kits began shipping today (Thur).  
>  
> Should take about a week (+/- 4th of July) to get a majority of the  
> units out the door.  
>  
> Cheers - Greg  
>  
Great News!  
Question: Did all of the parts arrive in time or will the kits arrive  
without them??

Looking forward to a new toy,  
Mike Blake N9KLM

---

## 167. Re: [DSP-93:944] Com port conflict resolved!

From: Mills@huey.udel.edu  
Date: Fri, 30 Jun 95 11:34:12 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9506301134.aa16456@huey.udel.edu>  
Rendered body type: text/plain

Howard,

I'm having a similar problem, but probably of unrealed cause. When  
copying RTTY/SITOR using dw93.exe as the terminal program, the character  
stream occasionally stalls. When I click on another window, it starts  
up again. When copying using Windoes terminal.exe as the terminal program,  
no such problem occurs. Then, Windoes can be pretty faunny.

When loading my program, just before it starts up, a bunch of what looks  
like program text appears in the d93we.exe window. If the downline  
loader starts the program before all the text has been transferred, that  
would explain it, since my program echoes command input. The problem  
is only a minor nuisance and is cheerfully ignored.

Dave

---

## 168. Re: [DSP-93:948] Re: Kits

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 30 Jun 1995 13:20:33 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199506301820.NAA17828@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

SRAM is still to be shipped.

Our order in Calf got reallocated. The distributor is looking for a broker

with the parts -- good news is that they will pay the price difference of between \$2.00 and \$5.00 per part.

I'll post a message as soon as I hear something...with 4th of July coming -- probably middle of next week.

Greg

According to Mike Blake:

>  
> >  
> > Kits began shipping today (Thur).  
> >  
> > Should take about a week (+/- 4th of July) to get a majority of the  
> > units out the door.  
> >  
> > Cheers - Greg  
> >  
> Great News!  
> Question: Did all of the parts arrive in time or will the kits arrive  
> without them??  
>  
> Looking forward to a new toy,  
> Mike Blake N9KLM  
>

---

## 169. Yaesu Beta test report #2

From: w6shp@amsat.org (Howard Sodja)  
Date: Fri, 30 Jun 1995 11:36:21 -0700  
To: dsp-93@tapr.org  
Message-ID: <199506301836.LAA02419@hopf.dnai.com>  
Rendered body type: text/plain

Hello Frank,

Last night I tried your psk93xlz.obj on the highest A0-16 pass yet, 76 degrees, and my FT-736 stayed nailed on frequency the whole time. The mic click beeps were so fast near the apex that they almost became a constant tone. I checked all the psk Microsat passes through July 5th and see none are going to pass over me higher than that, so it will be a while before I can give your Yaesu psk version the real acid test, a 90 overhead pass. Not even my TAPR PSK hardware modem can handle the Doppler on those overhead passes, probably because the Doppler goes faster than constant mic clicks can keep up with. We shall see. Subjectively it seems your program locks and prints within a wider frequency band than my psk hardware modem.

As I expected, throughput is a bit down compared to my hardware psk modem. But, in spite of the fact that the drive is over 4 volts p-p and flat topping, it is not that much poorer. So I am sure that when I have your next beta version with the gain adjusted for 1v p-p, the throughput will be improved. The TAPR PSK modem/DSP-93 modem comparison throughput figures so far (only 7 DSP passes) are mean BPS 63/40 and KB per pass 33/25 (per pblognew.exe).

This morning was the first chance I had to try the Yaesu p3c psk program, p3c93t1y.obj. A0-13 was weak. On my scope I could just barely see the psk signal above the noise. But more of a problem was some local QRM that pulsed 2.2 time a second, with a 3v p-p signal at TP1. My noise level was almost 1v p-p also. I will keep checking A0-13 to see if I can find it without the pulse QRM and at a higher elevation so the noise level is lower. Local QRM and noise on 2 meters has turned me off to mode B operation here. I miss mode J.

When loaded LED 7 is on, and LED 6 flashed with each QRM pulse. As I tune I occasionally see LED 4 flash. Is this what I tune for? Or do I need LED 6 on? Let me know the tuning procedure for this program.

I did copy RTTY but I got garbage. It has been a long time since I copied A0-13's RTTY. I seem to recall there was something nonstandard about it, but I forgot if it was speed, inversion, shift, or what. I unintentionally deleted my A0-13 RTTY tlm batch file I had for my PK-232 when I upgraded Procomm. What settings do I need?

Thanks for your work on a Yaesu psk mode. I am anxiously awaiting your power adjusted versions. I will try the port 2 versions when I get them.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605

## 170. Build Update 30 June 1995

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 30 Jun 1995 20:17:33 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac1a4e63d474@[204.181.160.4]>  
Rendered body type: text/plain

DSP-93 Build Update  
June '95 Production

Updated: 30 June 1995

We will issue updates to the build process as the situation warrants. The latest update will be posted to the dsp-93 mailing list and will be available on ftp.tapr.org in the directory /tapr/dsp93/updates.

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Be sure to visit the TAPR Web pages at <http://www.tapr.org/tapr/>

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You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94).

----- HERE'S YOUR CHANCE TO HELP THE GROUP -----

As you interface your DSP-93 to your radio, etc., how about writing up your experiences, procedures, problems, etc. Post your results and we'll collect them.

What additional would you like to see in the Operations Manual? Let me know and I'll sign you up for a section or two.

-----

June 30th, 1995 Update Section

Documentation Update  
-----

The June 1995 DSP-93 distribution ships with Version 2.17 of the EPROM. For Version 2.17 of the EPROMs, several documents on the distribution diskettes have been updated and their content included in a new document "Programming Guide for the DSP-93". The documents MONITOR.DOC, MEM-93.DOC, and MONMEM.DOC are now obsolete. Also the comment in MONITOR.INC about the SIN/COS table is an anachronism and should be ignored for Monitor Version 2.17.

The new document "Programming Guide for the DSP-93" is available at ftp.tapr.org in the tapr/dsp93/manuals directory with the name ProgGuide.word. The file is in Microsoft Word format.

There are also several other documents currently in the same directory.

|                             |                                  |
|-----------------------------|----------------------------------|
| DSP93_Interface_Win_Man.pdf | The D93WE PSR article            |
| DSP93_Assm_Man.pdf          | The current Assembly Manual      |
| DSP93_Ops_Manual.pdf        | The new DSP-93 Operations Manual |

pdf documents are in the Adobe portable document format. Freeware reader installers for this document format are available at:

On ftp.tapr.org the file is /tapr/utls/ACROREAD.EXE for Windows.  
On ftp.tapr.org the file is /tapr/utls/Acrobat\_Reader\_installer.hqx for MacOS.

On ftp.adobe.com the file is /pub/adobe/Acrobat/Windows/acroread.exe for PCs.  
On ftp.adobe.com the file is  
/pub/adobe/Acrobat/Macintosh/2.0.1/AcroRead.mac.sit or



/pub/adobe/ Acrobat/Macintosh/2.0r2/AcroRead.sea.bin for MacOS  
depending on which version you want.

#### Monitor Version 2.17 Programs in EPROM

-----

The programs in Monitor Version 2.17 have been updated from Version 2.16. The new program list follows. Where the name of the mnemonic differs from the .OBJ filename, the filename follows the mnemonic.

|                     |               |
|---------------------|---------------|
| 1-SCOPE             | D93SCOPE.OBJ  |
| 2-SPECTRUMANALYZER  | D93SPEC.OBJ   |
| 3-FUNCTIONGENERATOR | D93FUNC.G.OBJ |
| 4-CW_93D            |               |
| 5-HFU_93X           |               |
| 6-HF_93A            |               |
| 7-HF_93AE           |               |
| 8-MEMTEST           |               |
| 9-PKTP1             |               |
| A-PKTP2             |               |
| B-PSKP1             | PSK93R1J.OBJ  |
| C-PSKP2             | PSK93R2J.OBJ  |
| D-PSK_93T2          |               |
| E-PSK_93P2          |               |
| F-APT_93B           |               |
| G-TESTANIN          |               |
| H-TESTBUZZ          |               |
| I-TESTLEDS          |               |
| J-TESTPORT          |               |
| K-TESTRAMP          |               |
| L-FSKISIP1          | FSK93K1.OBJ   |
| M-FSKISIP2          | FSK93K2.OBJ   |
| N-FSK15P1           | FSK93U1.OBJ   |
| O-FSK18P1           | FSK93U1B.OBJ  |
| P-FSK15P2           | FSK93U2.OBJ   |
| Q-FSK18P2           | FSK93U2B.OBJ  |
| R-HF_93HT           |               |
| S-HF_93HTE          |               |
| T-HF_MODEM          |               |

#### Power Supply Balancing

-----

After both boards have been completed and assembled together, and the "DSP-93 Final Check" on page 25 of the Assembly Manual has been completed, perform a quick check of the balance of the two power supplies. Both +5V supplies on the two boards contribute to the +5V digital power planes. If the two regulators (VR100 and VR201) have significantly different regulating voltages, one of the regulators will carry more than its share of the load. The voltage across the two 0.22 ohm resistors (R107 and R210) should be APPROXIMATELY equal (within a factor of two). Somewhere in the range of 50-90 mV is about right. Should the balance be way off (the voltage across one of them zero, say), please post a message on the dsp-93 mail list and we will work out a solution.

#### Testing DSP-93 RAM memory

-----

When performing "Test 3: Memory Test" on page 29 of the Assembly Manual, you should test both banks of RAM memory. Both RAM banks can be tested by issuing the 'T' command in slow mode (i.e., after a reset) and again in fast mode (i.e., after a 'G' command). RAM U104-U107 is tested in slow mode and RAM U108-U111 is tested in fast mode.

#### Error in Test 8 instructions

-----

When performing "Test 8: TESTANIN" on page 32 of the Assembly Manual using DOS, enter the command 'DSPLOAD TESTANIN' instead of 'DSPLOAD TESTANIN.OBJ'.

Error in Test 9 instructions  
-----

When performing "Test 9: TESTPORT" on page 32 of the Assembly Manual using DOS, enter the command 'DSPLOAD TESTPORT' instead of 'DSPLOAD TESTPORT.OBJ'.

Correction to TNC Modem Disconnect Header Signal  
-----

On page 35 of the Assembly Manual, the signal on pin 6 of TNC Modem Disconnect Header should be TRANSMITTER KEY INPUT rather than NO CONNECTION.

-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 171. Re: [DSP-93:947] Re: Com port conflict resolved!

From: bstrick@plano.net (Bob Stricklin)  
Date: Fri, 30 Jun 1995 20:49:44 -0500  
To: dsp-93@tapr.org  
Message-ID: <9507010149.AA17423@dns>  
Rendered body type: text/plain

>Anybody know of any relief in site for IRQ limitations? I have used every  
>one from 1-15. I'm out, and have already doubled up on one. Somebody  
>somewhere was near-sighted again...  
>

The relief is to buy another computer and move some of the cards to the second computer. Then network them together.

Another solution is to use one of the multiport serial cards. They have come down in cost and work well.

Bob Stricklin, N5BRG

---

### 172. Re: [DSP-93:951] Yaesu Beta test report #2

From: fperkins@onramp.net  
Date: Fri, 30 Jun 1995 21:27:27 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507010227.VAA28507@ns.onramp.net>  
Rendered body type: text/plain

June 30, 1995 @ 21:10 CDST,

Hello Howard,

Find the following two files below:

psk93yx1.obj TX adj to 62%, RX gain adj to 25%  
psk93yz1.obj TX adj to 62% RX gain adj to 50%

The best RX signal level for PSK is somewhat higher than for FSK, so I have given you two versions to test. I think yz1 will give the best results. Look at LED 6. It should be 50 - 75 % as bright as LED 7 when locked to A0-16. Anyway, try some tests for yourself.

I don't have your e-mail in front of me, but I'll take a stab at the questions I remember:

A0-13 RTTY is unusual. It is 50 bps rather than 45.45, and it wants unshift on space OFF.

A0-13 is PSK challenging to copy. I have gotten pretty good apogee copy, but only when the pointing angle is good and the local noise is low. Unfortunately, it will get easier to copy next year as it

starts drifting down toward reentry ...

psk93yx1.obj:

:18200000FF801008FF801093FF801099FF801008CE01C808CE07CE030B  
:18201800CE08D0010006607EEB7ED00180256002E702FE8012A4D001F6  
:1820300000656002E702FE8012A4D00140256002E702FE8012A4C80037  
:18204800CE37CE20D00100206004CA006061CE00CE1FD001000360615D  
:18206000CE1FD00102636061CE1FD00100036061CE1FD001244A606115  
:18207800CE1FD00100036061CE1FD00124486061CE1FCE01D001001046  
:182090006004CA0060626063606460656066606760686069606A606B49  
:1820A800606C606D606E606F607060716072607360746075607660774E  
:1820C000607E60786079607A607BCA0A607CD0010090607DD001019074  
:1820D800607FC806CA0060206021602260236024602560266027602AD3  
:1820F000602B6029602C602D602E602F60306032C800D000007ECA008C  
:18210800C806CA00602FE32F8530C8002072D00504006072E672CE00A6  
:182120005500FF80109020006060FE80109DCE00CE2620616001CE00B6  
:18213800CE262C60686F206FD003028AF38010AA2072D00502006072E2  
:18215000FF8010AE2072D004FDF6072206AD0020688006E606AD00311  
:182168004000F28010B8606A296A686BD0011320006B586BCC20586CD3  
:182180003C6F386BCE146E703C6F386CCE146E71CA00A000566356624E  
:182198003C64BB983D63ABB1CE150B706D62CA00A0003C64A02E3D639B  
:1821B000A05B3D62A02ECE156D702070C8066031C800CA00A000566612  
:1821C80056653C67BB983D66ABB1CE150B716D65CA00A0003C67A02E43  
:1821E0003D6A0A05B3D65A02ECE156D713C703871CE146E6D56683C69A3  
:1821F800A7D4CE146D68206D00686068CA00A0003C68A7993D69B9072C  
:18221000CE156C692069606EFE80122D2070F38011192072D005400016  
:182228006072CA016070FF8011202072D004BFFF6072D001FFFF6070EC  
:182240002070D2000398558A6080D10003FE5589A000CA00CB665C9093  
:1822580012B9CE1560702070D0030067F480114A2070D0020067F2801C  
:18227000114AC8062032F4801142D00200016032F3801147C8082002F2  
:18228800004FF7F6002C800FF801154C8082002D00500806002C80667  
:1822A000D001FFE86032C800FE8011D2207FF380116B8A732073D004C1  
:1822B800200F580116B207ED0050001607EC8082002D0050040600260  
:1822D000C800FF801175207ED004FFFE607EC8082002D004FFBF6002F6  
:1822E800C8008A7356742073CE19D00440006074F5801185207FF380D0  
:182300001188CD01607FFF801188D0010190607F20744C75F680118EBC  
:18231800CA0060762076D00204FA6076D0034000F2801197607629762F  
:182330006877D0011320007758773C77A4ECCE146D772074F68011A7A1  
:182348002077CE2360772277D004FFFC6001E672C808E702C800EB7E13  
:18236000FE8011B3CE26C806D0010500602FE32F852FCA014E2FF68078  
:1823780011D0CA00602FE32F85302030D004005F60302030CD52F58055  
:1823900011D0207ED0050006607EEB7EFF800414C800CE265678CA00A9  
:1823A800A0003C79A7DDCE156D78206E00786078CA00A0003C78A034AC  
:1823C0003D79A034CE156C79207CD0030001607CF480122CCA0A607C05  
:1823D800567ACA00A0003C7BA7DDCE156D7A2079007A607ACA00A00057  
:1823F0003C7AA0343D7BA034CE156C7B207DF480120A207BCC20F480CD  
:18240800122CD0010090607DFF80122C207DD0030001607DD003005D05  
:18242000F3801221207ED0050080607EC806202EC800F680122C207EF7  
:18243800D004FFFB607EFF80122C207DF380122C207ED004FF7F607E07  
:18245000207ED0050006607ECE26206FC8066029C800296AC80668268C  
:18246800D00113200026CC105826CC2058273C293826CE146E2A3C29CB  
:182480003827CE146E2BCA00A000562156203C22BB983D21ABB1CE15C5  
:182498000B2A6D20CA00A0003C22A02E3D21A05B3D20A02ECE156D2AD6  
:1824B000CA00A000562456233C25BB983D24ABB1CE150B2B6D23CA00D3  
:1824C800A0003C25A02E3D24A05B3D23A02ECE156D2B3C2A382BCE147D  
:1824E0006E28562CCA00A0003C2DA7DDCE156D2C2028002C602CCA002F  
:1824F800A0003C2CA0343D2DA034CE156C2D202DC800D002003CF4809F  
:182510001297207ED0050040607E2072D004FEFF6072CA01C806602E1D  
:18252800C800FF8012A3207ED004FFBF607E2072D00501006072CA008D  
:18254000C806602EC800CE26C2FFFE8012AAFE8012AAACE26C2FFFE8003  
:1825580012B0FE8012B0CE26C2FFC3FF558BFB9012B2558AFB9012B196  
:18257000CE26FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF75  
:18258800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF53  
:1825A000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3B  
:1825B800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF23  
:1825D000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF0B  
:1825E800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3  
:18260000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFDA  
:18261800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF0001000100010001B3  
:182630000001000100010001000100010001000100000032006400965E  
:1826480000C800F901290159018801B601E3020E02390262028A02B024  
:1826600002D402F7031803360353036E0387039E03B203C403D403E116  
:1826780003EC03F503FB03FF040003FF03FB03F503EC03E103D403CF46  
:1826900003B2039E0387036E03530336031802F702D402B0028A0262C6  
:1826A8000239020E01E3018601880159012900F900C80096006400323A  
:1826C000000FCFF9CFF6AFF38F07FED7FEA7FE78FE4AFE1DFDF2B2  
:1826D800FDC7FD9EFD76FD50FD2CFD09FCE8FCCAFCAFC92FC79FC62E8  
:1826F000FC4EFC3FC2CFC1FFC14FC0BFC05FC01FC00FC01FC05FC0BF7

:18270800FC14FC1FFC2CFC3CFC4EFC62FC79FC92FCADFCCAFCE8FD092A  
:18272000FD2CFD50FD76FD9EFD7FDF2FE1DFE4AFE78FEA7FED7FF0711  
:18273800FF38FF6AFF9CFFCE000000320064009600C800F90129015910  
:18275000018801B601E3020E02390262028A02B002D402F7031803363D  
:182768000353036E0387039E03B203C403D403E103EC03F503FB03FF49  
:18278000040003FF03FB03F503EC03E103D403C403B2039E0387036E83  
:1827980003530336031802F702D402B0028A02620239020E01E301B628  
:1227B00001880159012900F900C800960064003200001D  
:00000001FF

psk93yz1.obj

:18200000FF801008FF801093FF801099FF801008CE01C808CE07CE030B  
:18201800CE08D0010006607EEB7ED001802D6002E702FE8012A4D001EE  
:18203000006D6002E702FE8012A4D001402D6002E702FE8012A4C80027  
:18204800CE37CE20D00100206004CA006061CE00CE1FD001000360615D  
:18206000CE1FD00102636061CE1FD00100036061CE1FD001244A606115  
:18207800CE1FD00100036061CE1FD00124486061CE1FCE01D001001046  
:182090006004CA0060626063606460656066606760686069606A606B49  
:1820A80060606C606D606E606F607060716072607360746075607660774E  
:1820C000607E60786079607A607BCA0A607CD0010090607DD001019074  
:1820D800607FC806CA0060206021602260236024602560266027602AD3  
:1820F000602B6029602C602D602E602F60306032C800D000007ECA008C  
:18210800C806CA00602FE32F8530C8002072D00504006072E672CE00A6  
:182120005500FF80109020006060FE80109DCE00CE2620616001CE00B6  
:18213800CE262C60686F206FD003028AF38010AA2072D00502006072E2  
:18215000FF8010AE2072D004FDF6072206AD0020688006E606AD00311  
:182168004000F2801088606A296A686BD0011320006B586BCC20586CD3  
:182180003C6F386BCE146E703C6F386CCE146E71CA00A000566356624E  
:182198003C64BB983D63ABB1CE150B706D62CA00A0003C64A02E3D639B  
:1821B000A05B3D62A02ECE156D702070C8066031C800CA00A000566612  
:1821C80056653C67BB983D66ABB1CE150B716D65CA00A0003C67A02E43  
:1821E0003D66A05B3D65A02ECE156D713C703871CE146E6D56683C69A3  
:1821F800A7D4CE146D68206D00686068CA00A0003C68A7993D69B072C  
:18221000CE156C692069606EFE80122D2070F38011192072D005400016  
:182228006072CA016070FF8011202072D004BFFF6072D001FFFF6070EC  
:182240002070D2000398558A6080D10003FE5589A000CA00CB665C9093  
:1822580012B9CE1560702070D0030067F480114A2070D0020067F2801C  
:18227000114AC8062032F4801142D00200016032F3801147C8082002F2  
:18228800D004FF7F6002C800FF801154C8082002D00500806002C80667  
:1822A000D001FFE86032C800FE8011D2207FF380116B8A732073D004C1  
:1822B8000200F580116B207ED0050001607EC8082002D0050040600260  
:1822D000C800FF801175207ED004FFF607EC8082002D004FFBF6002F6  
:1822E800C8008A7356742073CE19D00440006074F5801185207FF3800D0  
:182300001188CD01607FFF801188D0010190607F20744C75F680118EBC  
:18231800CA0060762076D00204FA6076D0034000F2801197607629762F  
:182330006877D0011320007758773C77A4ECCE146D772074F68011A7A1  
:182348002077CE2360772277D004FFFC6001E672C808E702C800EB7E13  
:18236000FE8011B3CE26C806D0010500602FE32F852FCA014E2FF68078  
:1823780011D0CA00602FE32F85302030D004005F60302030CD52F58055  
:1823900011D0207ED0050006607EEB7EFF800414C800CE265678CA00A9  
:1823A800A0003C79A7DDCE156D78206E00786078CA00A0003C78A034AC  
:1823C0003D79A034CE156C79207CD0030001607CF480122CCA0A607C05  
:1823D800567ACA00A0003C7BA7DDCE156D7A2079007A607ACA00A00057  
:1823F0003C7AA0343D7BA034CE156C7B207DF480120A207BCC20F480CD  
:18240800122CD0010090607DFF80122C207DD0030001607DD003005D05  
:18242000F3801221207ED0050080607EC806202EC800F680122C207EF7  
:18243800D004FFFB607EFF80122C207DF380122C207ED004FF7F607E07  
:18245000207ED0050006607ECE26206FC8066029C800296AC80668268C  
:18246800D00113200026CC105826CC2058273C293826CE146E2A3C29CB  
:182480003827CE146E2BCA00A000562156203C22BB983D21ABB1CE15C5  
:182498000B2A6D20CA00A0003C22A02E3D21A05B3D20A02ECE156D2AD6  
:1824B000CA00A000562456233C25BB983D24ABB1CE150B2B6D23CA00D3  
:1824C800A0003C25A02E3D24A05B3D23A02ECE156D2B3C2A382BCE147D  
:1824E0006E28562CCA00A0003C2DA7DDCE156D2C2028002C602CCA002F  
:1824F800A0003C2CA0343D2DA034CE156C2D202DC800D002003CF4809F  
:182510001297207ED0050040607E2072D004FEFF6072CA01C806602E1D  
:18252800C800FF8012A3207ED004FFBF607E2072D00501006072CA008D  
:18254000C806602EC800CE26C2FFFE8012AAFE8012AAFE26C2FFFE8003  
:1825580012B0FE8012B0CE26C2FFC3FF558BFB9012B2558AFB9012B196  
:18257000CE26FFFFFFFFFFF75  
:18258800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF53  
:1825A000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3B  
:1825B800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF23  
:1825D000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF0B  
:1825E800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3  
:18260000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF5DA  
:18261800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF0001000100010001B3

:182630000001000100010001000100010001000100000032006400965E  
:1826480000C800F901290159018801B601E3020E02390262028A02B024  
:1826600002D402F7031803360353036E0387039E03B203C403D403E116  
:1826780003EC03F503FB03FF040003FF03FB03F503EC03E103D403C4F6  
:1826900003B2039E0387036E03530336031802F702D402B0028A0262C6  
:1826A8000239020E01E301B601880159012900F900C80096006400323A  
:1826C0000000FFCEFF9CFF6AFF38FF07FED7FEA7FE78FE4AFE1DFDF2B2  
:1826D800FDC7FD9EFD76FD50FD2CFD09FCE8FCCAFCADFC92FC79FC62E8  
:1826F000FC4EFC3CFC2CFC1FFC14FC0BFC05FC01FC00FC01FC05FC0BF7  
:18270800FC14FC1FFC2CFC3CFC4EFC62FC79FC92FCADFCACFCE8FD092A  
:18272000FD2CFD50FD76FD9EFD76FD2FE1DFE4AFE78FEA7FED7FF0711  
:18273800FF38FF6AFF9CFFCE000000320064009600C800F90129015910  
:18275000018801B601E3020E02390262028A02B002D402F7031803363D  
:182768000353036E0387039E03B203C403D403E103EC03F503FB03FF49  
:18278000040003FF03FB03F503EC03E103D403C403B2039E0387036E83  
:1827980003530336031802F702D402B0028A02620239020E01E301B628  
:1227B00001880159012900F900C800960064003200001D  
:00000001FF

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Please contact Greg Jones at TAPR or the author for information on commercial licenses of this software.

Frank H. Perkins, Jr.

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### 173. Re: [DSP-93:944] Com port conflict resolved!

From: fperkins@onramp.net  
Date: Fri, 30 Jun 1995 21:31:48 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507010231.VAA28911@ns.onramp.net>  
Rendered body type: text/plain

Howard,

On AO-13 telemetry, you need enough signal amplitude for some lighting of LED 6.

Hope the QRM subsides.

73 Frank WB5IPM

---

# July 1995

Original source file: dsp.9507

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/dspsig/mail\\_archive/dsp.9507](http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9507)

## 1. Re: [DSP-93:951] Yaesu Beta test report #2

From: fperkins@onramp.net  
Date: Sat, 1 Jul 1995 10:45:05 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507011545.KAA15428@ns.onramp.net>  
Rendered body type: text/plain

Howard,

Here is the current doc file on the A0-13 telemetry programs:

June 25, 1995

Hi Gang,

These updated programs are for A0-13 telemetry and they will directly feed the PC3.EXE A0-13 telemetry software. Contact w8gus@tapr.org for more information on P3C.EXE.

Versions:

|             |                              |
|-------------|------------------------------|
| p3c93t1.obj | radio port 1, ground to tune |
| p3c93t2.obj | radio port 2, ground to tune |

NOTE: DATA IS OUTPUT FROM THE DSP-93 UART. YOU DON'T USE THE TNC WITH THIS PROGRAM. Data is output at 1200 bps, and DCD handshaking is implemented as needed by P3C.EXE.

ON upper SSB, adjust the audio so the amplitude LED (6) is about 30-50 % lit as showing some variation. Start from a frequency well below the A0-13 telemetry signal and tune upward slowly to grab the carrier at 1200 Hz. When lock occurs, LED 3 will light. If you continue to tune upward manually, the doppler tuning LED (4) will light and tune the radio back down, assuming you have the down tuning line hooked up. Otherwise, LED 4 will remind you to manually tune to correct doppler drift.

The two LED's on the far left light up tell you that you have detected the telemetry "sync" vector - you get 514 characters and it pauses until it decodes another sync vector.

When you exit this SW the UART will be set up for 1200 bps so reset the DSP-93 to get back to 19200.

73 Frank WB5IPM

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Please contact Greg Jones at TAPR or the author for information on commercial licenses of this software.

Frank H. Perkins, Jr.

## 2. New AO-13 Telemetry

From: dmedley@indirect.com (David Medley)  
Date: Sat, 1 Jul 1995 08:56:20 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507011556.IAA28787@bud.indirect.com>  
Rendered body type: text/plain

This morning I got up at 6.00am if you can believe that to try out the new ao-13 telemetry software. The first thing I noticed was very strong hash and birdies right on the beacon frequency. This turned out to be coming from the DSP-93. Replacing the metal cover did not help. Unplugging the modem disconnect from the rear of the DSP cleared the problem completely. Will do some experiments later today with ferrites to try and clear this up. Anyway it was not necessary to have this cable connected for AO-13 so all was well. The signal from the AO-13 beacon was just fair, running S 4-5 on the 736 S-meter. A preamplifier was also used. The tuning of this new modem was much easier than before. I found the best way was to adjust the audio gain until LED 6 has a barely perceptible flicker. At this point LED 4 should be flickering. Tune down slowly and a point will be found where LED 4 remains dark and LED 3 comes on. This point is quite critical and it helps a lot to be sure the radio is tuning with minimum steps. In the case of the 736 this is 10Hz. I also found that running the radio in the CW mode rather than USB made a big difference. Now LED 2 should come on firmly and data will be captured by the P3C software. I copied 80 records of quite good telemetry once I had figured out the tuning of the radio. I also found that it saved a lot of time if I first tuned the radio during the CW transmissions. Listen on the DSP speaker and tune for best cw. This will be very close to the correct point for the PSK telem. Thanks Frank. It works great. Now I will have to hook up the down tuning (with a relay of course!!).  
Dave KI6QE

---

## 3. Yaesu Beta test report #3

From: w6shp@amsat.org (Howard Sodja)  
Date: Sat, 01 Jul 1995 12:14:42 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507011914.MAA29367@hopf.dnai.com>  
Rendered body type: text/plain

Hello Frank,

I just tried psk93yx1 and yz1. You got the signal levels right. TD is a tiny bit over 800 mv p-p and TD a tiny bit over 2 v p-p and they are no long flat topped at TP1. But the mic click is gone! I thought my set up may have been messed up, so I ran psk93x1y. It tracked doppler as good as before. So I guess the mic click got disconnected while you adjusted the signal levels. Did you disable it to test the gain on your rig and forget to reconnect it?

I noticed the LEDs did not appear to light as before, and it seemed I had a harder time getting a print than I did before. But I was preoccupied with the mic click and running three of your programs. When I went back to psk93yx1 to note what the LEDs were doing, the pass was at 2 degrees. So I'll check that next pass and let you know afterwards.

Murphy lurks everywhere!

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 4. Acrobat Successful

From: ljs@west.net (L.J.Shepherd)  
Date: Sat, 01 Jul 1995 12:39:15 -0700  
To: dsp-93@tapr.org  
Cc: jhobson@west.net  
Message-ID: <199507011939.MAA18195@acme.sb.west.net>  
Rendered body type: text/plain

Ron and Group:

Had some time the other day and downloaded the acrobat reader from the tapr site.....I must happily report that I loaded it and printed out very nice copies of the Operations and Development Manuals on my little Canon Bubblejet printer. (I did get the error message others have reported on loading the reader.....I also got a "damaged file" message for

some reason, but ignored both error messages)

The installation of the reader was straightforward in the WINDOWS environment.....I usually hold my breath during these installations as often critical files get changed without warning, but all seems OK at present. The extra time spent with this new reader was worthwhile and would seem to present a nice alternative for those with laser or bubblejet printers. I'm not sure what would happen with a 24 pin dot matrix printer, perhaps others have tried that type.

So please accept this positive feedback.....another nice bit of TAPR effort.....thanks !

73, JIM K60YY

---

## 5. 2.17 eprom .obj files posted

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sun, 02 Jul 1995 02:55:30 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507020237.WAA01176@camel.campbell.edu>  
Rendered body type: text/plain

Hello All:

For those of you with the capabilities to burn the eproms, I have posted the .obj files on the ftp site for your access. They may be found at:

tapr/dsp93/eproms/u102\_217.obj        and  
tapr/dsp93/eproms/u103\_217.obj

I hope that helps some of you with the "upgrade" from 2.16 to 2.17.

Mark L. Hammond    [KC4EBR]

---

## 6. Re: [DSP-93:960] 2.17 eprom .obj files posted

From: Greg Jones <gjones@tenet.edu>  
Date: Sat, 1 Jul 1995 23:10:00 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507020410.XAA16833@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

The set of 2.17 EPROMs will be available from the TAPR office shortly for \$15.00

I'll need to get with Dorothy about this.

Greg

According to Mark L. Hammond:

>  
> Hello All:  
>  
> For those of you with the capabilities to burn the eproms, I have posted the  
> .obj files on the ftp site for your access. They may be found at:  
>  
> tapr/dsp93/eproms/u102\_217.obj        and  
> tapr/dsp93/eproms/u103\_217.obj  
>  
> I hope that helps some of you with the "upgrade" from 2.16 to 2.17.  
>  
>  
> Mark L. Hammond    [KC4EBR]  
>  
>

---

## 7. Yaesu Beta test report #4

From: w6shp@amsat.org (Howard Sodja)  
Date: Sat, 01 Jul 1995 23:29:10 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507020628.XAA05697@hopf.dnai.com>  
Rendered body type: text/plain

Hello Frank,

I got hung up on another project and missed the second A0-16 pass this afternoon. But I just got the 10:45 p.m. one, and I think I found the problem. With the original programs LEDs 3 and 6 are fully illuminated, but with psk93yx1 LED 3 is hard to get to even dimly light, and LED 6 is faint,



about half the illumination of the original xly and xlz versions. I could only get occasional print when LED 3 was at it's best for that pass. I did manage to get 3 or 4 mic clicks when I had it bright enough to get some text printed. But even then it was never as bright as the original xly and xlz versions.

Psk93yz1 was worse. LED 3 was off most of the time. At it's best it was very dim. Likewise LED 6 was dimmer than it was with the yx1 version. I never could get a print or a mic click with this version.

Both versions had LED 1 flicker faintly, 2 off, 4 flicker, 5 on and 7 on. Near the end of the pass I loaded the old psk93xly and was rewarded with everything working fine again, with good mic clicks and steady printing, and LEDs 2, 5, 6 and 7 all on and equally bright, with LEDs 1, 4 and 6 flickering.

So it looks like it needs a bit more than 2 v p-p to get it to track and print. I hope you have not spent too much time chasing down this problem on the assumption the signal level was ok.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

## 8. Re: [DSP-93:951] psk93x1a.obj

From: fperkins@onramp.net  
Date: Sun, 2 Jul 1995 11:39:44 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507021639.LAA08284@ns.onramp.net>  
Rendered body type: text/plain

July 2, 1995 @ 11:15 CDST

Hi Howard,

Here is psk93x1a.obj, which goes back to the original gain on RX but the adjusted gain on TX. I get the best results with about 4 V p-p RX signal, as measured with a scope on pin 38 of the A10 chip (32044). I am running an alpha board set and it does not have the same test point as the production boards.

BTW, I tried A0-16 on one pass yesterday and got poor results. I don't think this was the modem, but something degraded in the protocol SW on A0-16. Both WISP and PB seemed to "stall" for long periods.

My PB logs show typical downloads of 60 - 100 K per pass, with ave data rates around 100 bytes/sec, but not yesterday!

```
:18200000FF801008FF801093FF801099FF801008CE01C808CE07CE030B
:18201800CE08D0010006607EEB7ED00180356002E702FE8012A4D001E6
:1820300000756002E702FE8012A4D00140356002E702FE8012A4C80017
:18204800CE37CE20D00100206004CA006061CE00CE1FD001000360615D
:18206000CE1FD00102636061CE1FD00100036061CE1FD001244A606115
:18207800CE1FD00100036061CE1FD00124486061CE1FCE01D001001046
:182090006004CA0060626063606460656066606760686069606A606B49
:1820A800606C606D606E606F607060716072607360746075607660774E
:1820C000607E60786079607A607BCA0A607CD0010090607DD001019074
:1820D800607FC806CA0060206021602260236024602560266027602AD3
:1820F000602B6029602C602D602E602F60306032C800D000007ECA008C
:18210800C806CA00602FE32F8530C8002072D00504006072E672CE00A6
:182120005500FF80109020006060FE80109DCE00CE2620616001CE00B6
:18213800CE262C60686F206FD003028AF38010AA2072D00502006072E2
:18215000FF8010AE2072D004FDFF6072206AD0020688006E606AD00311
:182168004000F28010B8606A296A686BD0011320006B586BCC20586CD3
:182180003C6F386BCE146E703C6F386CCE146E71CA00A000566356624E
:182198003C64BB983D63ABB1CE150B706D62CA00A0003C64A02E3D639B
:1821B000A05B3D62A02ECE156D702070C8066031C800CA00A000566612
:1821C80056653C67BB983D66ABB1CE150B716D65CA00A0003C67A02E43
:1821E0003D66A05B3D65A02ECE156D713C703871CE146E6D56683C69A3
:1821F800A7D4CE146D68206D00686068CA00A0003C68A7993D69B9072C
:18221000CE156C692069606EFE80122D2070F38011192072D005400016
:182228006072CA016070FF8011202072D004BFFF6072D001FFFF6070EC
:182240002070D2000398558A6080D10003FE5589A000CA00CB665C9093
:1822580012B9CE1560702070D0030067F480114A2070D0020067F2801C
:18227000114AC8062032F4801142D00200016032F3801147C8082002F2
:18228800D004FF7F6002C800FF801154C8082002D00500806002C80667
```

:1822A000D001FFE86032C800FE8011D2207FF380116B8A732073D004C1  
:1822B8000200F580116B207ED0050001607EC8082002D0050040600260  
:1822D000C800FF801175207ED004FFFE607EC8082002D004FFBF6002F6  
:1822E800C8008A7356742073CE19D00440006074F5801185207FF380D0  
:182300001188CD01607FFF801188D0010190607F20744C75F680118EBC  
:18231800CA0060762076D00204FA6076D0034000F2801197607629762F  
:182330006877D0011320007758773C77A4ECCE146D772074F68011A7A1  
:182348002077CE2360772277D004FFFC6001E672C808E702C800EB7E13  
:18236000FE8011B3CE26C806D0010500602FE32F852FCA014E2FF68078  
:1823780011D0CA00602FE32F8530203D0004005F60302030CD52F58055  
:1823900011D0207ED0050006607EEB7EFF800414C800CE265678CA00A9  
:1823A800A0003C79A7DDCE156D78206E00786078CA00A0003C78A034AC  
:1823C0003D79A034CE156C79207CD0030001607CF480122CCA0A607C05  
:1823D800567ACA00A0003C7BA7DDCE156D7A2079007A607ACA00A00057  
:1823F0003C7AA0343D7BA034CE156C7B207DF480120A207BCC20F480CD  
:18240800122CD0010090607DFF80122C207DD0030001607DD003005D05  
:18242000F3801221207ED0050080607EC806202EC800F680122C207EF7  
:18243800D004FFFB607EFF80122C207DF380122C207ED004FF7F607E07  
:18245000207ED0050006607ECE26206FC8066029C800296AC80668268C  
:18246800D00113200026CC105826CC2058273C293826CE146E2A3C29CB  
:182480003827CE146E2BCA00A000562156203C22BB983D21ABBB1CE15C5  
:18249800B2A6D20CA00A0003C22A02E3D21A05B3D20A02ECE156D2AD6  
:1824B000CA00A000562456233C25BB983D24ABB1CE150B2B6D23CA00D3  
:1824C800A0003C25A02E3D24A05B3D23A02ECE156D2B3C2A382BCE147D  
:1824E0006E28562CCA00A0003C2DA7DDCE156D2C2028002C602CCA002F  
:1824F800A0003C2CA0343D2DA034CE156C2D202DC800D002003CF4809F  
:182510001297207ED0050040607E2072D004FEFF6072CA01C806602E1D  
:18252800C800FF8012A3207ED004FFBF607E2072D00501006072CA008D  
:18254000C806602EC800CE26C2FFFE8012AAFE8012AAACE26C2FFFE8003  
:1825580012B0FE8012B0CE26C2FFC3FF558BFB9012B2558AFB9012B196  
:18257000CE26FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF75  
:18258800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF53  
:1825A000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3B  
:1825B800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF23  
:1825D000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF0B  
:1825E800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3  
:18260000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFDA  
:18261800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF0001000100010001B3  
:18263000000100010001000100010001000100000032006400965E  
:1826480000C800F901290159018801B601E3020E02390262028A02B024  
:1826600002D402F7031803360353036E0387039E03B203C403D403E116  
:1826780003EC03F503FB03FF040003FF03FB03F503EC03E103D403C4F6  
:1826900003B2039E0387036E03530336031802F702D402B0028A0262C6  
:1826A8000239020E01E3018601880159012900F900C80096006400323A  
:1826C0000000FFCEFF9CFF6AFF38FF07FED7FEA7FE78FE4AFE1DFDF2B2  
:1826D800FDC7FD9EFD76FD50FD2CFD09FCE8FCCAFCAFD9C92FC79FC62E8  
:1826F000FC4EFC3FC2CFC1FFC14FC0BFC05FC01FC00FC01FC05FC0BF7  
:18270800FC14FC1FFC2CFC3CFC4EFC62FC79FC92FCADFCFCAFC8FD092A  
:18272000FD2CFD50FD76FD9EFD7FDF2FE1DFE4AFE78FEA7FED7FF0711  
:18273800FF38FF6AFF9CFFCE000000320064009600C800F90129015910  
:18275000018801B601E3020E02390262028A02B002D402F7031803363D  
:182768000353036E0387039E03B203C403D403E103EC03F503FB03FF49  
:18278000040003FF03FB03F503EC03E103D403C403B2039E0387036E83  
:1827980003530336031802F702D402B0028A02620239020E01E301B628  
:1227B00001880159012900F900C800960064003200001D  
:00000001FF

## 9. Heatstroke Cure???? Possible

From: jeff@kcbbs.gen.nz (Jeff Garrett)  
Date: Mon, 03 Jul 1995 11:29:47 +1200  
To: dsp-93@tapr.org  
Message-ID: <199507022318.LAA09713@kcbbs.gen.nz>  
Rendered body type: text/plain

Hi

I think I may have found a possible cause of the problem that a lot of users in the first build have had. With a possible cure.!!

The symptoms of the DSP-93 problem are that the unit 'resets' after it has become 'warm' this manifests it self with the DSP losing the program and LED 1 flashing indicating a reset. It has also been noted that it happens when a PTT is sent with possible RF getting into the unit.

The reasoning I have come up with is the problem is due to the use of the MAX692 as opposed to the MAX692A supervisory chip. From the specs that I have obtained the reset threshold on the 692 is 4.5-4.75v and on the 962A is 4.25-4.5v. The way that the reset is achived in the DSP-93 requires the use of a 50 ohm resistor in the Vcc line to the chip (R104) which is

series with a 220 ohm during reset to drop the Vcc on chip to approx 4 volts thereby causing a reset. My theory is that even with this 50 ohm resistor in there and the MAX692 nominal current draw of 5mA there is a problem. 5mA 50ohm = .25v i.e. the Vcc to the MAX692 is a nominal 4.75V. Right on the edge of the triggering required for reset of the MAX 692 but well clear of the MAX692A.

Maybe this fault is occurring only with those kits that were supplied with the MAX692 and not with the MAX692A.

I have, as an experiment, changed the value of R104 to 39 ohms and over the last 48 hours not experienced any unwanted resets. ( this raises the nominal Vcc to the chip to 4.8v)

As you may have gathered I have the MAX692 in my unit. Any comments you have on this would be appreciated.

Cheers

Jeff ZL1BIV

jeff@kcbbs.gen.nz

Jeff Garrett  
ZL1BIV

jeff@kcbbs.gen.nz

zl1biv@zl1lab.#11.nz.oc

---

## 10. Re: [DSP-93:964] Heatstroke Cure???? Possible

From: Mills@huey.udel.edu  
Date: Mon, 3 Jul 95 0:54:30 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9507030054.aa25579@huey.udel.edu>  
Rendered body type: text/plain

Jeff,

Would life be so simple as admit a cause as simple as that? Pending comment from the designers, my paws have snatch of 39 Ohms.

Dave

---

## 11. DSP-93 Page

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 3 Jul 1995 03:14:59 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199507030814.DAA04457@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

If you have Web access, check out the changes to

<http://www.tapr.org/tapr> on the dsp-93 page (found on the top page).

I have added QT movies based on video Frank supplied me a few weeks ago -- just haven;t had time to do anything with them. You'll need a QuickTime player to via the movies.

Plus -- there are some new photos and diagrams to look over.

Cheers - Greg

---

## 12. DSP-93 Schematics

From: rcox@holli.com (Ron Cox)  
Date: Mon, 3 Jul 1995 09:59:02 -0600  
To: dsp-93@tapr.org  
Message-ID: <ac1dbdb400021004b979@[198.70.38.216]>  
Rendered body type: text/plain

I have been reading the dsp-93 mail for a few months while waiting for my kit to come. Recently I have down loaded all the manuals and have sucessfully printed them using Word and the Adobe Acrobat Reader. To finish my collection of electronic documents I have been trying to get the schematics printed. I am running a Power Macintosh, so I obtained the postscript schematics from the TAPR server, converted them to Adobe Illustrator type files using a program called epsConverter 1.2.2 I obtained from the Compuserve DTPforum, and then downloaded the Adobe Illustrator TryOut file from the Adobe FTP site. This all worked great except I can only view the schematics as the TryOut file will not let me print or copy anything. I am a little reluctant to purchase Adobe Illustrator just to get the sechmatics printed.

I can probably find a Mac with Adobe Illustrator at where I work to print the files, but I was thinking that others are probably faced with similar problems. Can the schematic files be converted to PDF format like the manuals so that we can read them with the Acrobat Reader? I think that it would be a good plan to use a common file format such as the PDF format for all dsp-93 documents that are made available.

If anyone knows of a good path to printing the dsp-93 schematics on a Mac, please let me know.

Ron Cox  
W9KFB  
rcox@holli.com

---

### 13. Re: [DSP-93:967] DSP-93 Schematics

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 3 Jul 1995 10:45:13 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac1dc0c023f6@[204.181.160.13]>  
Rendered body type: text/plain

>If anyone knows of a good path to printing the dsp-93 schematics on a  
>Mac, please let me know.  
>  
>Ron Cox  
>W9KFB  
>rcox@holli.com

The "Apple Printer Utility" application that comes with the Mac LaserWriter drivers can download PS files just fine.

Ron W5RKN

also:  
w5rkn@amsat.org

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### 14. SRAM News

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 3 Jul 1995 11:20:53 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199507031620.LAA12123@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

The SRAM arrived today at the office.

The office will send SRAM to the people that their kits had already been mailed later this week.

Cheers - greg, WD5IVD

---

### 15. Re: [DSP-93:966] DSP-93 Page

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 3 Jul 1995 12:58:29 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac1ddca6b25f@[204.181.160.5]>  
Rendered body type: text/plain

>I have added QT movies based on video Frank supplied me a few weeks ago --  
>just haven't had time to do anything with them. You'll need a QuickTime  
>player to view the movies.

Greg,

They are xxxxx.qt.zip file names. Did you intend to have to do the 2 step process to play them? Netscape, even though .zip files .qt files have helper apps defined, it doesn't like .qt.zip files. Why not make them .mov filenames so a one-step process can be defined (and Mark can be happy).

Can Netscape do the two step?

You said it works on a Mac. How? Besides unzipping, then playing (oh so un-cool)

Ron W5RKN

also:

---

## 16. Re: [DSP-93:967] DSP-93 Schematics

From: hank@cospc.com (Hank Pustarfi)  
Date: Mon, 3 Jul 1995 15:09:02 -0400 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <m0sSqrq-0005UdC@bonzai.cospc.com>  
Rendered body type: text/plain

Recently, Ron Cox wrote:

>  
> manuals so that we can read them with the Acrobat Reader? I think that it  
> would be a good plan to use a common file format such as the PDF format for  
> all dsp-93 documents that are made available.  
>

Is there a utility to convert pdf formatted files to pbm or ps for those of us using \*nix, not DOS? If Acrobat will convert the files to one of the formats, could someone put the converted files where they can gotten with ftp. I know there is a \*nix version of Acrobat but an exe for Sun's only.

Hank k3wgv

--

---

## 17. Re: [DSP-93:970] Re: DSP-93 Page

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 3 Jul 1995 14:19:14 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507031919.OAA26708@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Yeah - two step process.

The zipping saves about 30%, which I thought would be important.

I can easily change the name to movie.  
If folks don't care between a 600K and a 900K fie.

greg

According to Ronald G. Parsons:

>  
> >I have added QT movies based on video Frank supplied me a few weeks ago --  
> >just haven;t had time to do anything with them. You'll need a QuickTime  
> >player to via the movies.  
>  
> Greg,  
>  
> They are xxxxx.qt.zip file names. Did you intend to have to do the 2 step  
> process to play them? Netscape, even though .zip files .qt files have  
> helper apps defined, it doesn't like .qt.zip files. Why not make them .mov  
> filenames so a one-step process can be defined (and Mark can be happy).  
>  
> Can Netscape do the two step?  
>  
> You said it works on a Mac. How? Besides unzipping, then playing (oh so un-cool)  
>  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

---

## 18. Re: [DSP-93:972] Re: DSP-93 Page

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 3 Jul 1995 15:22:01 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac1e01464d21@[204.181.160.18]>  
Rendered body type: text/plain

>Yeah - two step process.

>

>The zipping saves about 30%, which I thought would be important.

>

>I can easily change the name to movie.  
>If folks don't care between a 600K and a 900K file.  
>  
>greg

To me, the two step process is a bummer. Download, unzip, view (by then I've lost interest).

Why don't we try some .mov samples and evaluate.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 19. Re: [DSP-93:973] Re: DSP-93 Page

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 3 Jul 1995 16:11:49 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507032111.QAA03576@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

I'll reload them tonight...takes a bit.

greg

According to Ronald G. Parsons:

>  
> >Yeah - two step process.  
> >  
> >The zipping saves about 30%, which I thought would be important.  
> >  
> >I can easily change the name to movie.  
> >If folks don't care between a 600K and a 900K file.  
> >  
> >greg  
> >  
> To me, the two step process is a bummer. Download, unzip, view (by then I've lost interest).  
> >  
> Why don't we try some .mov samples and evaluate.  
> >  
> >  
> Ron W5RKN  
> >  
> also:  
> w5rkn@amsat.org  
> >  
> >  
> >

---

## 20. Win QT Viewers

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 3 Jul 1995 16:15:28 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199507032115.QAA02201@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Mark -- check out the following site:

<http://www.scs.usna.navy.mil/Students/C96/m962520/viewers.html>

Fellow has links to lots of different viewers...two of them for windows.

Let us know which works the best.

Greg

---

## 21. Re: [DSP-93:957] New AO-13 Telemetry

From: fperkins@onramp.net  
Date: Mon, 3 Jul 1995 17:56:17 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507032256.RAA01585@ns.onramp.net>  
Rendered body type: text/plain

Hi Dave,

Thanks for the report. Later we may want to speed up the tuning for the increased doppler shift associated with A0-13's reentry situation.

73 Frank WB5IPM

---

## 22. Re: [DSP-93:964] Heatstroke Cure???? Possible

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 3 Jul 1995 19:17:07 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac1e2ecefcd@[204.181.160.16]>  
Rendered body type: text/plain

Jeff,

> As you may have gathered I have the MAX692 in my unit. Any comments  
>you have on this would be appreciated.

I also have the MAX692 in my unit with R104 at 51 ohms. I have not seen the heatstroke problem.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 23. Re: [DSP-93:975] Win QT Viewers

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 04 Jul 1995 02:27:26 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507040228.WAA10589@camel.campbell.edu>  
Rendered body type: text/plain

Getting QT 2.0.1 even "as we speak". Will let you know my results.

>Mark -- check out the following site:  
>  
><http://www.scs.usna.navy.mil/Students/C96/m962520/viewers.html>  
>  
>Fellow has links to lots of different viewers...two of them for windows.  
>  
>Let us know which works the best.  
>  
>Greg  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 24. New Soft

From: Toni Fernandez <Toni.Fernandez@p111.radio.encomix.com>  
Date: Sun, 02 Jul 95 20:45:33 +0000  
To: "dsp-93@tapr.org" <dsp-93%tapr.org@f3.n342.z2.fidonet.org>  
Message-ID: <1236625038@p111.f17.n341.z2.ftn>  
Rendered body type: text/plain

Hi dsp-93 group,

I have not received the mail from the list for a couple of months, when I resumed I saw there is a new eeprom release 2.17 (I already got the OBJ files from the Tapr ftp site). What is the difference with former releases? I saw also a modem listing of the new release in a recent posting but with no descriptions. Please could you tell me which are the updated modems and differences? Where can I get just the OBJ files (not the full content of the diskettes) of the updated modems? I want to try the soft before opening the DSP-93, it works 100% and I hate to open the 'sandwich' again to change eeproms.

Before asking this I downloaded several docs from the ftp site but no one described the differences, I also downloaded the monthly mail but I don't know to unpack \*.Z files.

Toni, ea4le

-----  
toni.fernandez@radio.encomix.com  
ea4le@amsat.org  
Compuserve 100341,640  
-----

---

## 25. Re: [DSP-93:975] Win QT Viewers

From: fperkins@onramp.net  
Date: Tue, 4 Jul 1995 07:26:35 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507041226.HAA22910@ns.onramp.net>  
Rendered body type: text/plain

Hi Greg,

I tried to downld one of the video clip files from the dsp-93 web page this morning and got an error message something like "the server reports this file is not present". Did you take the video clip files back off the web page?

73 Frank WB5IPM

---

## 26. Re: [DSP-93:979] New Soft

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 4 Jul 1995 07:40:56 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac1ee66a234e@[204.96.0.131]>  
Rendered body type: text/plain

>Hi dsp-93 group,

>

>I have not received the mail from the list for a couple  
>of months, when I resumed I saw there is a new eprom release  
>2.17 (I already got the OBJ files from the Tapr ftp site).  
>What is the difference with former releases?

Covered in the Build Update dated 30 June. Also the Programming Guide.

>I saw also a modem listing of the new release in a recent  
>posting but with no descriptions. Please could you tell me  
>which are the updated modems and differences?

See the descriptions on the DOC directory in the new diskette 2.

>Where can I get just the OBJ files (not the full content of the  
>diskettes) of the updated modems?

Now you have more reason than that to get the new diskette 2.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 27. Re: [DSP-93:969] SRAM News

From: Bob Smith <rsmith@internetMCI.COM>  
Date: Tue, 04 Jul 1995 09:54:15 -0500  
To: Greg Jones <gjones@tenet.edu>, "dsp-93@tapr.org" <dsp-93@tapr.org>  
Message-ID: <01HSGV50LN9E936175@MAILSRV1.PCY.MCI.NET>  
Rendered body type: text/plain

-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --

Hurray! Wouldn't you know it I went on a 3 week vacation starting last Friday! Perfect timing to keep me away from my Kit the maximuni amount of time! I could have guessed this after weeks of waiting :)

----- REPLY, Original message follows -----

Date: Monday, 03-Jul-95 11:24 AM

From: Greg Jones                    \ Internet:    (gjones@tenet.edu)  
To:    dsp-93@tapr.org            \ Internet:    (dsp-93@tapr.org)

Subject: [DSP-93:969] SRAM News



The SRAM arrived today at the office.

The office will send SRAM to the people that their kits had already been mailed later this week.

Cheers - greg, WD5IVD

----- REPLY, End of original message -----

---

## 28. Re: [DSP-93:979] New Soft

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 04 Jul 1995 16:44:16 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507041645.MAA17368@camel.campbell.edu>  
Rendered body type: text/plain

Hi Tony,

I would suggest getting all the updated diskettes as they emerge. Be careful when you install (maybe change the install1/2.bat files?) to make sure you don't wipe out your existing stuff.

I won't be making "update disks". It would be silly to try and keep that up as people upgrade from various builds.

So, you can probably get disk2 and sort thru it for the things you want...sorry if that is inconvenient.

My recollection is that the new .obj files will all run on the 2.16 eproms. Does this statement need to be corrected? ;-)

>  
>Hi dsp-93 group,  
>  
>I have not received the mail from the list for a couple  
>of months, when I resumed I saw there is a new eprom release  
>2.17 (I already got the OBJ files from the Tapr ftp site).  
>What is the difference with former releases?  
>I saw also a modem listing of the new release in a recent  
>posting but with no descriptions. Please could you tell me  
>which are the updated modems and differences?  
>Where can I get just the OBJ files (not the full content of the  
>diskettes) of the updated modems?  
>I want to try the soft before opening the DSP-93, it works 100%  
>and I hate to open the 'sandwich' again to change eproms.  
>  
>Before asking this I downloaded several docs from the ftp  
>site but no one described the differences, I also downloaded  
>the monthly mail but I don't know to unpack \*.Z files.  
>  
>Toni, ea4le  
>-----  
>toni.fernandez@radio.encomix.com  
>ea4le@amsat.org  
>Compuserve 100341,640  
>-----  
>  
>

Mark L. Hammond [KC4EBR]

---

## 29. Re: [DSP-93:980] Re: Win QT Viewers

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 4 Jul 1995 13:38:38 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507041838.NAA12266@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Yes Frank -- I moved all the movies out for the time being....didn't have time to replace the old html page.

We are having problem getting the movies to run on Windows systems...so it was just easier to move them out until we get the problem corrected than to explain to everyone after they had downloaded a Meg file that it didn't work.

I am putting the last version of the page back today -- until we get the problem corrected.

I left a file called  
<http://www.tapr.org:80/tapr/qt/rtty.fade.hf.qt.zip>

Try getting this file if you want to test if the file works on your system.

Mark had problems downloading a later version -- but then again - I did also...so working on the old problem of making files work on both Mac and PC.

Greg

According to fperkins@onramp.net:

```
>
> Hi Greg,
>
> I tried to downld one of the video clip files from the
> dsp-93 web page this morning and got an error message
> something like "the server reports this file is not
> present". Did you take the video clip files back off
> the web page?
>
> 73 Frank WB5IPM
>
>
```

---

### 30. Re: [DSP-93:984] Re: Win QT Viewers

From: fperkins@onramp.net  
Date: Tue, 4 Jul 1995 14:20:19 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507041920.OAA25432@ns.onramp.net>  
Rendered body type: text/plain

This may explain my problem. I have had a h... of a time getting QT201 to work. Maybe it installed OK after all.

Oh, to be on the bleeding edge of technology!

73 Frank WB5IPM

---

### 31. eprom code request

From: ljs@west.net (L.J.Shepherd)  
Date: Tue, 04 Jul 1995 12:41:12 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507041941.MAA05735@acme.sb.west.net>  
Rendered body type: text/plain

Ron and Group:

In response to my latest upload of the Build Update to the satellites, I've had a request to upload the V2.17 code that is apparently available on the TAPR ftp site. Is there any problem with doing this.....? I assume this would be OK since the code is on the ftp site.....but just wanted to check. Thanks.

73, Jim K60YY

---

### 32. Re: [DSP-93:985] Re: Win QT Viewers

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 4 Jul 1995 14:56:00 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507041956.OAA02863@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Oh tell me! I just started the process...I think I finally got figured out what files are suppose to be in the bin directoy that wasn;t there :-)

I'm going to upload a zip file with the correct organization when I have it figured out.

I am going to play some more.

Greg

According to fperkins@onramp.net:

```
>
> This may explain my problem. I have had a h... of a time getting QT201
> to work. Maybe it installed OK after all.
```

>  
> Oh, to be on the bleeding edge of technology!  
>  
> 73 Frank WB5IPM  
>  
>

---

### 33. Re: [DSP-93:986] eprom code request

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 4 Jul 1995 15:12:02 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d03ac1f50aa19fc@[204.181.160.92]>  
Rendered body type: text/plain

>Ron and Group:  
>  
> In response to my latest upload of the Build Update to the  
>satellites, I've had a request to upload the V2.17 code that is apparently  
>available on the TAPR ftp site. Is there any problem with doing this.....?  
>I assume this would be OK since the code is on the ftp site.....but just  
>wanted to check. Thanks.  
>  
73, Jim K60YY

As far as I know it should be OK. It would be appropriate to include a note with the files that the code is Copyright 1995 Tucson Amateur Packet Radio.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 34. Testing QT Needed

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 4 Jul 1995 16:56:44 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199507042156.QAA27405@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Well - I think I might have licked the QT problem.

(we get this fixed -- we should be able to get back to dsp-93 questions :-)

How many people are on the list waiting for their kit ?  
Dorothy reported that the first 40 units were shipped and SRAM will follow Wednesday. The office gets out about 20 or so kits a day. Lots of paper work on the international shipments and UPS paperwork -- so takes time.

Anyway --  
I have three untitled files in  
<http://www.tapr.org:80/tapr/qt/>

untitled.mov  
untitled2.mov  
untitled3.mov

They are all the same 2 sec segment...but each is generated a little differently.

If you enter the above http line in your system -- you should get a ftp looking list that you can download from.

I have downloaded them on both Mac and Windows and have been able to read them okay, but would like for someone else to give them a try.

Let me know. If it works -- I'll go back and generate new files and post them. Then we should be in business.

If you need to get QT for Windows you can try:  
<http://www.scs.usna.navy.mil/Students/C96/m962520/viewers.html>

If you use this -- see the listing of the directory strucute below -- you'll need it.

You can also get it from:  
<http://quicktime.apple.com/ordering-qt.html>

On another note -- I just got finsihed reading an article in the last MacUser

(July 95) about the direction of Acrobat and HTML. Very interesting and possibly very powerful.

---

You have to generate two directories (bin and help)  
bin:  
\*.qtc  
\*.exe (except \_mssetup.exe, \_mstest.exe, readme.exe, setup.exe)  
\*.dll (except ms\*.dll setupenu.dll)  
\*.drv  
\*.vbx  
  
help:  
\*.hlp (except setupenu.hlp)

I think that gets all the files in the correct location.

---

### 35. Re: [DSP-93:989] Testing QT Needed

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 4 Jul 1995 18:15:36 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac1f7b2514fb@[204.181.160.77]>  
Rendered body type: text/plain

>Well - I think I might have licked the QT problem.

Looks good. Helper app for Netscape is MoviePlayer  
Quadra 700 (25 MHz '040)

>Anyway --  
>I have three untitled files in  
> http://www.tapr.org:80/tapr/qt/  
>  
>untitled.mov

Smoothest of all. Slider moves evenly

>untitled2.mov

Slider stops half-way thru but sound continues

>untitled3.mov

Slider stops half-way thru and sound has a gap

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 36. Re: [DSP-93:989] Testing QT Needed

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Tue, 4 Jul 1995 18:49:09 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac1f83bf197d@[204.96.0.129]>  
Rendered body type: text/plain

CORRECTED MESSAGE

>Well - I think I might have licked the QT problem.

Looks good. Helper app for Netscape is MoviePlayer  
Quadra 700 (25 MHz '040)

>Anyway --  
>I have three untitled files in  
> http://www.tapr.org:80/tapr/qt/  
>  
>untitled.mov

Smoothest of all. Slider moves evenly

>untitled2.mov

Slider pauses half-way thru but sound continues

>untitled3.mov

Slider pauses half-way thru and sound has a gap

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 37. Re: [DSP-93:988] Re: eprom code request

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 4 Jul 1995 19:12:55 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507050012.TAA14472@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

No Problem...just like TON said -- include the copyright..

Greg

According to Ronald G. Parsons:

>  
> >Ron and Group:  
> > In response to my latest upload of the Build Update to the  
> >satellites, I've had a request to upload the V2.17 code that is apparently  
> >available on the TAPR ftp site. Is there any problem with doing this.....?  
> >I assume this would be OK since the code is on the ftp site.....but just  
> >wanted to check. Thanks.  
> > 73, Jim K6OYY  
>  
>  
> As far as I know it should be OK. It would be appropriate to include a note  
> with the files that the code is Copyright 1995 Tucson Amateur Packet Radio.  
>  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

---

### 38. Re: [DSP-93:990] Re: Testing QT Needed

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 4 Jul 1995 19:14:54 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507050014.TAA26143@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Thanks ron.

1 is no compression  
2 is jpeg compression  
3 is jpeg compression after being run through movieanalyzer  
(this is typically done of CD-ROM based movies).

So - will do up the no compressions again.

greg

According to Ronald G. Parsons:

>  
> >Well - I think I might have licked the QT problem.  
>  
> Looks good. Helper app for Netscape is MoviePlayer  
> Quadra 700 (25 MHz '040)  
>  
> >Anyway --  
> >I have three untitled files in  
> > http://www.tapr.org:80/tapr/qt/  
> >  
> >untitled.mov  
>  
> Smoothest of all. Slider moves evenly  
>  
> >untitled2.mov

```
>
> Slider stops half-way thru but sound continues
>
> >untitled3.mov
>
> Slider stops half-way thru and sound has a gap
>
>
>
> Ron W5RKN
>
> also:
> w5rkn@amsat.org
>
>
>
```

---

### 39. Re: [DSP-93:992] Re: eprom code request

From: ljs@west.net (L.J.Shepherd)  
Date: Tue, 04 Jul 1995 19:27:59 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507050228.TAA02643@acme.sb.west.net>  
Rendered body type: text/plain

Greg and Ron:

OK, thanks. The copyright notice will be included. ...Jim.

```
>No Problem...just like TON said -- include the copyright..
>
>Greg
>
>According to Ronald G. Parsons:
>>
>> >Ron and Group:
>> > In response to my latest upload of the Build Update to the
>> >satellites, I've had a request to upload the V2.17 code that is apparently
>> >available on the TAPR ftp site. Is there any problem with doing this.....?
>> >I assume this would be OK since the code is on the ftp site.....but just
>> >wanted to check. Thanks.
>> > 73, Jim K6OYY
>>
>>
>> As far as I know it should be OK. It would be appropriate to include a note
>> with the files that the code is Copyright 1995 Tucson Amateur Packet Radio.
>>
>>
>> Ron W5RKN
>>
>> also:
>> w5rkn@amsat.org
>>
>>
>
>
>
```

---

### 40. Re: [DSP-93:989] Testing QT Needed

From: tomob@ix.netcom.com (Thomas E. O'Boyle )  
Date: Tue, 4 Jul 1995 20:01:22 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507050301.UAA14665@ix2.ix.netcom.com>  
Rendered body type: text/plain

You wrote:

```
>
>Well - I think I might have licked the QT problem.
>
>(we get this fixed -- we should be able to get back to dsp-93
questions :-)
>
>How many people are on the list waiting for their kit ?
>Dorothy reported that the first 40 units were shipped and SRAM will
follow
>Wednesday. The office gets out about 20 or so kits a day. Lots of
paper
>work on the international shipments and UPS paperwork -- so takes
```

time.  
>

I can't wait for mine to show. Anyway you can tell me when it should ship? (If it hasn't already!) Please advise.

73 de Tom, N9GUN

---

#### 41. Re: [DSP-93:983] Re: New Soft

From: bstrick@plano.net (Bob Stricklin)  
Date: Tue, 4 Jul 1995 22:06:16 -0500  
To: dsp-93@tapr.org  
Message-ID: <9507050306.AA14985@dns>  
Rendered body type: text/plain

>My recollection is that the new .obj files will all run on the 2.16 eproms.  
>Does this statement need to be corrected? ;-)  
>

This is correct. We worked hard to be sure the hardware and firmware would support upgrades. Everything will run with all kit builds.

Bob Stricklin, N5BRG

---

#### 42. .mov files working

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 05 Jul 1995 03:21:45 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507050323.XAA18750@camel.campbell.edu>  
Rendered body type: text/plain

Greg,

The latest 3 .mov files work. I agree with Ron's results, that "untitled.mov" was the best.

Good work!

Mark L. Hammond [KC4EBR]

---

#### 43. eprom code uploaded

From: ljs@west.net (L.J.Shepherd)  
Date: Tue, 04 Jul 1995 22:20:51 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507050521.WAA13508@acme.sb.west.net>  
Rendered body type: text/plain

Ron and Greg:

I've uploaded the eprom code (I think) to K0-23 and 25. I sent them as binary hex file attachments.....zip compressed they were about 13K and 9K, which made me a bit suspicious of my upload procedure. I had transferred them using my auto ftp mode in my web browser.....they listed as 31K each in my directory and looked like binary files.....I will retransfer and upload if my download and unzip does not restore them appropriately. Any comments on the compressed file size difference ? 73, Jim K60YY

---

#### 44. eprom code upload

From: ljs@west.net (L.J.Shepherd)  
Date: Tue, 04 Jul 1995 22:40:12 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507050541.WAA14727@acme.sb.west.net>  
Rendered body type: text/plain

Ron and Greg:

The downloaded code files were about 32.8K and 32.9K when unzipped. Hopefully all transferred without corruption.....and I did include the copyright notice as requested.

Jim K60YY

---

#### 45. Re: [DSP-93:997] .mov files working

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 5 Jul 1995 06:59:19 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507051159.GAA20803@Leslie-Francis.tenet.edu>

Rendered body type: text/plain

That is good news Mark. I just finished several works generating new movies with a few extras items.

I am uploading now -- same directory if you want to play before I change the web page back.

I had to stick with version 2 (JPEG compression). The difference between no compression and JPEG was huge after the file got larger than the test program we played with.

Greg

According to Mark L. Hammond:

>

> Greg,

>

> The latest 3 .mov files work. I agree with Ron's results, that  
> "untitled.mov" was the best.

>

> Good work!

>

> Mark L. Hammond [KC4EBR]

>

>

---

#### 46. Re: [DSP-93:999] eprom code upload

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 5 Jul 1995 08:14:00 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac203a7b066f@[204.96.0.139]>  
Rendered body type: text/plain

>Ron and Greg:

>

> The downloaded code files were about 32.8K and 32.9K when unzipped.  
> Hopefully all transferred without corruption.....and I did include the  
> copyright notice as requested.

> Jim K6OYY

The unzipped files should each be exactly 32,767 bytes in length. I'll dl the files and compare them.

Ron W5RKN

also:  
w5rkn@amsat.org

---

#### 47. Re: [DSP-93:999] eprom code upload

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 5 Jul 1995 12:24:34 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac207aaec985@[204.96.0.144]>  
Rendered body type: text/plain

>Ron and Greg:

>

> The downloaded code files were about 32.8K and 32.9K when unzipped.  
> Hopefully all transferred without corruption.....and I did include the  
> copyright notice as requested.

> Jim K6OYY

The files on K0-25 are not valid. Whatever you did to the files replaced all 0x0A bytes with 0x0D 0x0D 0x0A.

Looks like you handled them as text files rather than binary files.

Ron W5RKN

also:  
w5rkn@amsat.org

---

#### 48. Re: [DSP-93:1001] Re: eprom code upload



From: ljs@west.net (L.J.Shepherd)  
Date: Wed, 05 Jul 1995 13:41:23 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507052042.NAA12064@acme.sb.west.net>  
Rendered body type: text/plain

Ron: Hmmmmmm.....the dl'd file size was the same as what I ftp'd direct from the tapr server.....sorry to put you to the trouble to check this out. I noticed some ascii copyright text within each file along with the binary code.....which might have changed the file size from what you referenced. Jim

>>Ron and Greg:  
>>  
>> The downloaded code files were about 32.8K and 32.9K when unzipped.  
>>Hopefully all transferred without corruption.....and I did include the  
>>copyright notice as requested.  
>> Jim K60YY  
>  
>The unzipped files should each be exactly 32,767 bytes in length. I'll dl  
>the files and compare them.  
>  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org  
>  
>  
>  
>

---

#### 49. Re: [DSP-93:1002] Re: eprom code upload

From: ljs@west.net (L.J.Shepherd)  
Date: Wed, 05 Jul 1995 13:47:45 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507052048.NAA12550@acme.sb.west.net>  
Rendered body type: text/plain

Ron: Thanks for checking.....the problem likely occurred in the original ftp process as they were uploaded as binary attachments. I have my default ftp client set to binary hex and perhaps it has glitched itself to text in the process of switching internet providers. Sorry for the hassle.....I will send a "do not use" notice and re-upload this evening. Having the correct file size now will help. Jim.

>>Ron and Greg:  
>>  
>> The downloaded code files were about 32.8K and 32.9K when unzipped.  
>>Hopefully all transferred without corruption.....and I did include the  
>>copyright notice as requested.  
>> Jim K60YY  
>  
>  
>The files on K0-25 are not valid. Whatever you did to the files replaced all  
>0x0A bytes with 0x0D 0x0D 0x0A.  
>  
>Looks like you handled them as text files rather than binary files.  
>  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org  
>  
>  
>  
>

---

#### 50. Another HF modem round

From: Mills@huey.udel.edu  
Date: Wed, 5 Jul 95 17:27:50 EDT  
To: dsp-93@tapr.org  
Message-ID: <9507051727.aa08300@huey.udel.edu>

Folks,

My RTTY/SITOR HF FSK modem has been through another design review and overhaul. The major objectives this haul are (1) a much improved RTTY signal gate and autostart function, and (2) a much improved SITOR modem with performance demonstrably better than existing analog designs, which in my case is the AEA PK-232. While the PK-232 performance with weak signal SITOR is commendable, my objective was to see how much better an optimized linear receiver could do under suitably ugly band conditions.

I am happy to report the latest digital modem really and truly does achieve good copy on signals the analog modem completely misses and, for those signals that both modems can copy, the erasure rate with the digital modem is considerably lower than with the analog one. I verified these claims in tests with both modems connected to the same computer-tuned SSB radio and SITOR signals transmitted by AT&T radiotelex stations near New York, Miami and San Francisco, and signals transmitted by the profligated WLO radiotelex station near Miami (heard on zillions of frequencies in the NBDP coast station bands).

The computer tunes to one of these radiotelex stations twice an hour throughout the day and to WIAW four times per day and records the decoded text for both modems. On many occasions, SITOR signals were so faint or so covered up in QRM that they could not be detected by ear with the radio speaker, yet the digital modem copied them 100% and the analog modem with varying degrees of garble. A typical example given in the readme.txt file shows the digital modem produced an erasure rate only one-fourth that of the analog modem when faced with a challenging signal. These observations are of course very unscientific (we say "anecdotal") evidence; true evidence requires controlled conditions, measured error rates and comparisons with analytical models. Maybe I'll do that sometime.

I learned a few things on the overhaul, mainly to avoid absolute thresholds, where the amplitude of a signal (like the various distance functions) is compared to a manually adjustable threshold. This means, as the signal fades to the noise floor, the threshold cannot adapt, even though the signal/noise ratio might be just fine. I changed the distance function to be the ratio of the old distance to the RMS signal measured over the bits of each character as it is decoded. The improvement, especially with weak signals, is dramatic. In particular, the LED tuning indicators work right down to the noise floor.

I also changed the character sync scheme to use all five repetitions of the CCIR retrain signal - some 70 bits in all. The resulting processing gain is so much that it is no longer necessary to calculate the carrier/noise ratio or fiddle with signal gates, modulation gates and related claptrap. The LED tuning display continues to work, but the signal gate (LED 3) is not used. Turns out the PK-232 does not use the threshold control in AMTOR either.

I then overhauled the RTTY decoder with what I learned in the SITOR overhaul. The improvement in error rate is not as dramatic as with the SITOR decoder, but certainly noticeable under weak signal conditions. The major improvement comes from an overhaul of the carrier distance code that operates the carrier gate. This resulted in a significant increase in reliably distinguishing between a legitimate carrier and noise. The implementation draws on technology developed in the area of pattern analysis and classification, a weakness to which I succumbed some years ago.

Responding to suggestions from current users, I added an unshift-on-space function (u{0-3} command) and a suppress-erasure function (q command). I happened to notice the radiotelex stations use the unshift-on-space function on information broadcasts, but not on at least some weather broadcasts. In fact, their weather broadcasts, apparently relayed from U.S. Weather Bureau feeds, contain many phrases and sentences separated by "...". An experienced RTTY operator would certainly advise against that! Like the PK-232, the modem now prints an erasure character "\_" if a received character quality (distance) is below the erasure threshold. I find this useful when adjusting the thresholds, but it can be disabled with the q command toggle.

To conform with most radiotelex broadcasts, I switched the Baudot/ASCII translation to use the CCIR keyboard, rather than the U.S. keyboard. This conforms to WIAW broadcasts and AT&T broadcasts; but, on at least some WLO broadcasts, a butchered U.S. keyboard is used, where the "#" character apparently is replaced by "'". Ask not for whom the BEL tolls.

There are other additions to the command suite, including the v{+-} and g{0-7} commands. The v{+-} command adjusts the erasure threshold, which affects the "\_" erasure as described above. The g{0-7} command adjusts the analog gain of the DSP-93, which can be useful when connecting to the recorder output on some radios. The a1 command is gone (replaced by the a2 command), since the new carrier distance code is so good that it is no longer necessary. As a side note, I don't presently plan to implement more exotic operator features, such as command completion, command confirmation or detailed status reports. Many of these functions can be implemented in terminal program scripts or Unix shell scripts. I do see a need to extract some performance data, such as error/erasure rates, signal and noise density histograms, etc.

Meanwhile, for what it's worth, the distribution, including updated readme.txt and relnotes.txt files, as well as new file info.txt containing useful RTTY and SITOR broadcast frequencies and times, is on louie.udel.edu in the pub/ntp directory as the files modem.zip and modem.tar.Z. I'll upload the stuff to the TAPR site when I catch my breath.

Dave, W3HCF

---

## 51. re-upload of eprom code

From: ljs@west.net (L.J.Shepherd)  
Date: Wed, 05 Jul 1995 14:37:21 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507052138.OAA15904@acme.sb.west.net>  
Rendered body type: text/plain

Ron:

TAKE 2:

I retransferred the files and they both arrived at 32,767 this time. I've sent error messages and have the files ready to re-upload this evening as zipped binary attachments. They have again both compressed to file sizes about 4k different in size, but I assume this is due to the code content and the nature of the Zip compression algorithm. Jim.

---

## 52. HF modem moves west

From: Mills@huey.udel.edu  
Date: Wed, 5 Jul 95 17:34:48 EDT  
To: dsp-93@tapr.org  
Message-ID: <9507051734.aa08302@huey.udel.edu>  
Rendered body type: text/plain

Folks,

I made good the promise of moving the new modem code to ftp.tapr.org.

Gawd, ftp.tapr.org is over two seconds as the packets fly between here (U Delaware) and that critter. It's 11 Internet hops from here, but all but the last two hops are less than 80 ms as the packets fly. According to the Network Time Protocol, it is only 46 ms from its upstream time source and 16 ms clock offset from it. That evidence points to a really slow tail circuit, even slower than the 9600-bps circuit I used to use from home (now, it's ISDN).

Dave, W3HCF

---

## 53. Re: [DSP-93:1007] HF modem moves west

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 5 Jul 1995 17:34:32 -0500 (CDT)  
To: dsp-93@tapr.org  
Cc: n5lyt@dingus.n5lyt.datarace.com (Lee Ziegenhals)  
Message-ID: <199507052234.RAA03988@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Interesting Dave.

I'll pass this along to Lee, who maintains our system.

greg

According to Mills@huey.udel.edu:

>

> Folks,

>

> I made good the promise of moving the new modem code to ftp.tapr.org.

>

> Gawd, ftp.tapr.org is over two seconds as the packets fly between here  
> (U Delaware) and that critter. It's 11 Internet hops from here, but  
> all but the last two hops are less than 80 ms as the packets fly.  
> According to the Network Time Protocol, it is only 46 ms from its  
> upstream time source and 16 ms clock offset from it. That evidence  
> points to a really slow tail circuit, even slower than the 9600-bps  
> circuit I used to use from home (now, it's ISDN).  
>  
> Dave, W3HCF  
>

---

## 54. New DSP-93 Page

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 5 Jul 1995 17:36:35 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199507052236.RAA07791@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Well - the movies are now back on the page and they work to :-)

- \* RTTY during a fade with Dave's modem
- \* KO-23 pass at 99% eff
- \* AMTOR decode
- \* 300 hf packet
- \* psk pass
- \* 9600 fsk sat pass (U0?)

Have a look.

<http://www.tapr.org/tapr>

Click on the dsp-93 link.

Cheers - Greg

---

## 55. Arrived!!

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Wed, 5 Jul 95 20:25:03 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507060225.AA18593@rgfn.epcc.Edu>  
Rendered body type: text/plain

Well the wait is over! I am ready to join you guys on this dsp93 stuff. The kit arrived this eveing ( I am in Texas :-)). I have had the software loaded for months and just downloaded a couple of the .mov files and they worked. Yep saw the movies. Oh, the pdf Acrobat files worked great so have read most of the docs but I have a job to attend to soooooo give me a little time to build the kit.  
charlie ...wa5kyv... El Paso, Tx.

---

## 56. Uploaded EPROMs good

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Wed, 5 Jul 1995 21:54:25 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac210037290e@[204.181.160.6]>  
Rendered body type: text/plain

The images of the 2.17 EPROMs on KO-23 compare accurately to the images on ftp.tapr.org.

The files are 15DB3 and 15DB4.

Thanks Jim.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 57. DSP-93 Update

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 5 Jul 1995 23:57:28 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build), tapr-bb@tapr.org (TAPR-BB mailing)  
Message-ID: <199507060457.XAA15858@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

=====

140 units are currently shipping out of 180 units that were kitted. Thus, 40 DSP-93 units are available for shipping now! Only a short wait while the orders before new ones are shipped.

---

Check out the TAPR/AMSAT DSP-93 Web Page. <http://www.tapr.org/tapr>

---

#### New Items:

- \* New 2.17 EPROM Set

Images are available on <ftp://ftp.tapr.org/tapr/dsp93/eproms>  
Images have also been uploaded on many of the satellites  
EPROM sets can be purchased from the TAPR office for \$15.00  
plus \$2.00 s/h within the US.

- \* New DSP-93 Operations Guide (see below)

- \* New DSP-93 Developers Guide (see below)

Documents are available on <ftp://ftp.tapr.org/tapr/dsp93/manuals>  
and <http://www.tapr.org/tapr>  
A set of the new guides can be purchased from the TAPR office for  
\$5.00 plus \$2.00 s/h within the US.

=====

- \* DSP-93 Operations Guide (contents)

#### Introduction

##### Loading the DSP-93 Software

- Connecting the DSP-93 to your computer

- Monitor Test

- Loading Files from the Monitor

- Loading files from the D93WE.EXE

- Loading Files from DOS

- Loading files from a Macintosh Computer

- Loading files using WiSP

##### How to connect the DSP-93 to a TNC

##### RADIO IO Port Configuration Setup

##### EPROM Version 2.15, 2.16 and later

##### Example IO Port Configuration Setup

##### How to connect the DSP-93 to Radios

##### Transmitter and Receiver Interfacing

##### Modifying your radios for 9600 bps

##### Connecting your radios

##### Modem Documentation

- FSK modems

- PKT modems

##### How to connect the DSP-93 to your Radio

##### IC-275/IC-475

##### IC-970

##### KENWOOD TS-790A

##### YAESU FT-736R

Contributions by Syd Horne VE3EG0, Roy Welch, W0SL, Ron Parsons, W5RKN, Mark Hammond, KC4EBR and Howard Sodja, W6SHP. Edited by Ron Parsons, W5RKN

=====

- \* DSP-93 Developers Guide (contents)

#### Introduction and Overview

##### Books to Read

##### Theory of Operation of DSP-93

- DSP-93 Design

- Code Development

- Memory Map

- Memory Mapping

- Internal memory (TMS320C25)

- External memory

##### The DSP-93 Monitor

- DSP-93 Firmware - Monitor Operation

- Sine/Cosine table

##### The Parts of a DSP-93 Program

- Header (Instructions, Copyrights, Disclaimers, etc.)
- The Include Files
- Memory Location Equates
- Program Constant Equates
- Program Origin
- Interrupt Vectors
- Initialization of the Math, Serial and Memory Model
- Initialization of the AIO
- Initialization of the DSP
- Handling Interrupts
- Serial Port IO and Exiting to the Monitor
- Wait Functions
- Defining Data Tables
- Using Pre-defined Data Tables
- The End
- AIO Port Programming
  - Setting the AIO conversion frequency
- IO Port Programming
  - Which Port does What
  - Hardware Port IO Assignments
- Debugging DSP-93 Programs
  - Debug functions in the Monitor
  - Debugging using LOC.ASM
  - Monitor IO Routines
  - Monitor Memory Usage
- Assembling a DSP-93 Program
  - How to assemble a file using TASM under DOS
  - How to assemble a file using D93WE under Windows
  - How to assemble a file using DSP-93Control under MacOS

Contributions by Ron Parsons, W5RKN Don Haselwood, K4JPJ Bob Stricklin, N5BRG. Edited by Ron Parsons, W5RKN.

-----  
 Tucson Amateur Packet Radio  
 8987-309 E Tanque Verde Rd #337 \* Tucson, Az \* 85749-9399 \* 817-383-0000  
 e-mail: TAPR@TAPR.ORG    <http://www.tapr.org/tapr>    <ftp://ftp.tapr.org>

## 58. Re: [DSP-93:1011] Uploaded EPROMs good

From: ljs@west.net (L.J.Shepherd)  
 Date: Wed, 05 Jul 1995 22:12:09 -0700  
 To: dsp-93@tapr.org  
 Message-ID: <199507060513.WAA20267@acme.sb.west.net>  
 Rendered body type: text/plain

Glad to help out. 73, Jim.  
 >The images of the 2.17 EPROMs on K0-23 compare accurately to the images on  
 >ftp.tapr.org.  
 >  
 >The files are 15DB3 and 15DB4.  
 >  
 >Thanks Jim.  
 >  
 >  
 >Ron W5RKN  
 >  
 >also:  
 >w5rkn@amsat.org  
 >  
 >  
 >  
 >

## 59. Re: DSP-93 Schematics

From: rcox@holli.com (Ron Cox)  
 Date: Thu, 6 Jul 1995 20:20:45 -0600  
 To: dsp-93@tapr.org  
 Message-ID: <ac22455902021004ed72@[198.70.38.167]>  
 Rendered body type: text/plain

>>If anyone knows of of a good path to printing the dsp-93 schematics on a  
 >>Mac, please let me know.  
 >>  
 >>Ron Cox  
 >>W9KFB  
 >>rcox@holli.com  
 >

>The "Apple Printer Utility" application that comes with the Mac LaserWriter  
>drivers can download PS files just fine.  
>  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org

Ron,

Thanks for the help. A fellow ham from Apple (also waiting on his dsp-93) also told me to try the "Laserwriter Utility" shipped with the Power Mac with System 7.5. It was buried in the Quickdraw GX installation files, and I had to run the Quickdraw GX install program to get the real application. I am using a HP 550C (without the HP optional Postscript software) here at home, so had to take the files and utility program to work and print them on my Laserwriter there. Now all my documentation is ready, all I need now is the "kit". It sounds like that should be any day now. I am ready!

Thanks for this forum! I have a feeling it is going to get busy here in a few days.

Ron Cox  
W9KFB  
rcox@holli.com

---

## 60. (no subject)

From: rc Cox@holli.com  
Date: Fri, 7 Jul 1995 09:05:18 -0500  
Message-ID: <199507071405.JAA03913@sawdust.holli.com>  
Rendered body type: text/plain

[Empty message body]

---

## 61. start your engines!

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 07 Jul 1995 02:09:57 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507070212.WAA06946@camel.campbell.edu>  
Rendered body type: text/plain

Hey Gang,

Free "atta-boy" to the guy who gets his "2nd Build" unit done first!

Have fun, and please note anything strange on the diskette distribution.

Mark L. Hammond [KC4EBR]

---

## 62. New and improved manuals

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Fri, 7 Jul 1995 16:15:43 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d03ac2352d9c159@[204.251.33.13]>  
Rendered body type: text/plain

The Macintosh DSP-93 Interface companion article to the Windows DSP-93 Interface article has been added to the manuals in  
<ftp://ftp.tapr.org/tapr/dsp93/manuals>.  
The file name is DSP93\_Interface\_Mac\_Man.pdf.

Two others, DSP93\_Assm\_Man.pdf and DSP93\_Ops\_Manual.pdf, have been reprocessed and nor longer issue the "Bad BBox warning".

As stated before, Freeware readers for the pdf format documents are available at:

<ftp://ftp.tapr.org/tapr/utls/ACROREAD.EXE> for Windows.  
[ftp://ftp.tapr.org/tapr/utls/Acrobat\\_Reader\\_installer.hqx](ftp://ftp.tapr.org/tapr/utls/Acrobat_Reader_installer.hqx) for MacOS.

<ftp://ftp.adobe.com/pub/adobe/Acrobat/Windows/acroread.exe> for PCs.  
<ftp://ftp.adobe.com/pub/adobe/Acrobat/Macintosh/2.0.1/AcroRead.mac.sit> or  
<ftp://ftp.adobe.com/pub/adobe/Acrobat/Macintosh/2.0r2/AcroRead.sea.bin> for MacOS  
depending on which version you want.

These are also available through the TAPR Web pages at <http://www.tapr.org/tapr/>

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 63. W3HCF's HF Modem

From: ljs@west.net (L.J.Shepherd)  
Date: Fri, 07 Jul 1995 22:31:18 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507080531.WAA12088@acme.sb.west.net>  
Rendered body type: text/plain

Hello Group:

I've just tried Dave's new hf modem (July 5 Version) and would like to report that it is very impressive. I tried it on both RTTY and SITOR/AMTOR --just receiving-- and it's ability to produce solid copy under very noisy, weak signal conditions is truly awesome !

I was interested in trying a mode that offered forward error correction, hence got interested in the AMTOR/SITOR Mode B capabilities of Dave's modem. Using marginal signals from W1AW for a test source, the AMTOR transmissions produced essentially solid copy. The RTTY performance, while very impressive, did not match the AMTOR results and I assume this is in part due to the error correction features of the AMTOR FEC mode.

As Dave indicates in his readme.txt file, this AMTOR-SITOR modem has been significantly improved over his previous version. He very thoughtfully included a listing of commercial stations transmitting SITOR and RTTY for test purposes. My plan is to give the transmit mode a try next..... it's been over 30 years since I've operated an hf teleprinter system.

Just thought you all might be interested in my first tests of Dave's latest HF modem design.....like the DSP-93, it's a great piece of work !

73, Jim K60YY

---

### 64. Missing Mail

From: jeff@kcbbs.gen.nz (Jeff Garrett)  
Date: Sun, 09 Jul 1995 00:59:03 +1200  
To: dsp-93@tapr.org  
Message-ID: <199507081248.AAA01268@kcbbs.gen.nz>  
Rendered body type: text/plain

Hi

For some reason I have not been receiving any mail from the dsp mail list since the beginning of the month. I have resubscribed now. If you have sent me any mail in the last week could you please resend it.

Thanks

Jeff Garrett  
ZL1BIV                      jeff@kcbbs.gen.nz                      zllbiv@zllab.#11.nz.oc

---

### 65. Re: [DSP-93:1019] Missing Mail

From: Greg Jones <gjones@tenet.edu>  
Date: Sat, 8 Jul 1995 09:30:49 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507081430.JAA18635@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

The mail archives is at [ftp://ftp.tapr.org/tapr/dsp93/mail\\_acrhives](ftp://ftp.tapr.org/tapr/dsp93/mail_acrhives)

I think that is the correct address.

The mail archives is updated each night. So they are kept up to date.

Cheers - greg

According to Jeff Garrett:

>

> Hi

> For some reason I have not been receiving any mail from the dsp mail list



> since the beginning of the month. I have resubscribed now. If you have sent  
> me any mail in the last week could you please resend it.  
>  
> Thanks  
>  
> Jeff Garrett  
> ZL1BIV                                jeff@kcbbs.gen.nz                zllbiv@zllab.#11.nz.oc  
>  
>

---

## 66. Re: [DSP-93:1018] W3HCF's HF Modem

From: Mills@huey.udel.edu  
Date: Sat, 8 Jul 95 10:47:26 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9507081047.aa19781@huey.udel.edu>  
Rendered body type: text/plain

Jim,

Thanks for the kind words. I would expect, indeed, that the RTTY performance would not measure up to the SITOR performance, due to the rather heroic integration times used in the latter case. However, you might find the RTTY synchronous mode may improve copy under some conditions, like severe multipath fading. I'd be interested in your comments using live two-way QSOs, especially SITOR. There's so much integration going on that it's hard to forget stale synchronization information and come up a new source when switching from transmit to receive in my favorite analog loopback mode. I may have to stick something in the code to short the integrators when doing that.

The SITOR/AMTOR Mode A ARQ has of course crossed my mind. Like in the FEC case, soft-decision and correlation techniques represent the ideal linear receiver and could be used in a memory-ARQ scheme like some other specialized radio systems known to me. The big downer to SITOR, however, is its miserable efficiency - 50% in a 14-bit codeword. It should be possible to do better than that, say rate 3/4, which would at least make it competitive to 75-baud RTTY. There is of course no reason why the present modem could be run at speeds above or below 100 baud, of course. That, as well as alternate codes, would require a FCC STA.

Another idea I've been kicking around is a hybrid FEC/ARQ scheme where the transmitter would pause for a second or so at the end of each line and before the retrain sequence. Receivers would contend during the pause to request repeats of erasures during the previous line. Looking at typical decoded copy, erasures are far more common than outright errors. Assuming receivers can keep their clocks aligned during pauses and that the FEC transmitter can quickly acquire the selective-repeat requests, that scheme might have better throughput than individual ARQ with each receiver. The beauty is, except for the lowered throughput because of the pause, the existing protocol doesn't break.

Dave, W3HCF

---

## 67. Re: [DSP-93:1019] Missing Mail

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Sat, 8 Jul 1995 10:35:53 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac2455f43005@[204.181.160.26]>  
Rendered body type: text/plain

>Hi  
>For some reason I have not been receiving any mail from the dsp mail list  
>since the beginning of the month. I have resubscribed now. If you have sent  
>me any mail in the last week could you please resend it.  
>  
>Thanks  
>  
>Jeff Garrett  
>ZL1BIV                                jeff@kcbbs.gen.nz                zllbiv@zllab.#11.nz.oc

You may wish to get the list archives and see what you missed.

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive.

To request a specific month, send mail again to 'listserv@tapr.org', subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e., nov.94).

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 68. Re: [DSP-93:1020] Re: Missing Mail

From: jeff@kcbbs.gen.nz (Jeff Garrett)  
Date: Sun, 09 Jul 1995 15:30:42 +1200  
To: dsp-93@tapr.org  
Message-ID: <199507090319.PAA09069@kcbbs.gen.nz>  
Rendered body type: text/plain

>The mail archives is at ftp://ftp.tapr.org/tapr/dsp93/mail\_acrhives  
>  
>I think that is the correct address.  
>  
>The mail archives is updated each night. So they are kept up to date.  
>  
>Cheers - greg

Hi Greg  
Thanks for the info. I have downloaded them and caught up with what is going on.

Cheers

Jeff Garrett  
ZL1BIV                                    jeff@kcbbs.gen.nz                    zl1biv@zl1lab.#11.nz.oc

---

## 69. Re: [DSP-93:1022] Re: Missing Mail

From: jeff@kcbbs.gen.nz (Jeff Garrett)  
Date: Sun, 09 Jul 1995 15:30:46 +1200  
To: dsp-93@tapr.org  
Message-ID: <199507090319.PAA09072@kcbbs.gen.nz>  
Rendered body type: text/plain

>You may wish to get the list archives and see what you missed.  
>  
>You can get copies of all past messages distributed on the dsp-93@tapr.org  
>list by sending mail to 'listserv@tapr.org', subject of 'list', message of  
>'index dsp-93'. This message will request a listing of all files in the  
>dsp-93 mail archive.  
>

Hi Ron  
Thanks for the info. I have downloaded what I missed and caught up with all that has happened

Cheers

Jeff Garrett  
ZL1BIV                                    jeff@kcbbs.gen.nz                    zl1biv@zl1lab.#11.nz.oc

---

## 70. Just checking

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 10 Jul 1995 07:39:59 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac26cfe789a4@[204.181.160.8]>  
Rendered body type: text/plain

Any new DSP-93 builders got started yet?

Any problems?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 71. Re: [DSP-93:1025] Just checking

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 10 Jul 1995 13:17:08 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507101320.JAA06950@camel.campbell.edu>  
Rendered body type: text/plain

Remember the free "attaboy" to the first one done!

>Any new DSP-93 builders got started yet?  
>  
>Any problems?  
>  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 72. RE: [DSP-93:1025] Just checking

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Mon, 10 Jul 95 14:48:01 BST  
To: dsp-93@tapr.org  
Message-ID: <9507101348.AA17548@getafix.oasis.icl.co.uk>  
Rendered body type: text/plain

Ron, still waiting for kit to arrive. I guess they take a little longer to get to the UK.

John Melton, g0orx/n6lyt

---

## 73. Re: [DSP-93:1025] Just checking

From: lpthomas@kc.grapevine.com (Larry P. Thomas)  
Date: Mon, 10 Jul 1995 13:21:55 -0500  
To: dsp-93@tapr.org  
Message-ID: <m0sVNGD-000UW7C@kc.grapevine.com>  
Rendered body type: text/plain

>Any new DSP-93 builders got started yet?  
>  
>Any problems?  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org

I've been following the DSP-93 mail for about a month now and am real impressed by the capabilities of the unit. Looks like the best thing since sliced bread. Is there as current list to get on to get in line to buy one? How do I get a kit when I'm ready to buy?

Thanks  
Larry WA0GWA

-----  
Larry P. Thomas                      voice : 1.913.888.0282  
Krell Technologies                   fax : 1.913.782.9359  
8960 Bond                            pager : 1.816.989.HELP  
Overland Park, KS 66214              e-mail : lpthomas@kc.grapevine.com  
-----

---

## 74. Re: [DSP-93:1028] Re: Just checking

From: rparsons@bga.com (Ronald G. Parsons)  
Date: Mon, 10 Jul 1995 14:30:13 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac272fbf0e81@[204.181.160.19]>  
Rendered body type: text/plain

>Larry WA0GWA

>I've been following the DSP-93 mail for about a month now and am real impressed  
>by the capabilities of the unit. Looks like the best thing since sliced bread.  
>Is there as current list to get on to get in line to buy one? How do I get  
>a kit

>when I'm ready to buy?  
>  
>Thanks  
>Larry WA0GWA

There are currently a small number in stock waiting for an order. When these are sold, you will need to wait for the next build, when ???

Don't wait - get one NOW :-)

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 75. gettin' a DSP-93

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 10 Jul 1995 16:08:38 -0400  
To: dsp-93@tapr.org  
Message-ID: <199507102008.QAA08643@camel.campbell.edu>  
Rendered body type: text/plain

Try this:

Tucson Amateur Packet Radio  
8987-309 E. Tanque Verde Rd., #337  
Tucson, AZ 85749-9399

Office: 817-383-0000  
Fax: 817-566-2544

They will gladly take your order.

>>Larry WA0GWA  
>  
>>I've been following the DSP-93 mail for about a month now and am real impressed  
>>by the capabilities of the unit. Looks like the best thing since sliced bread.  
>>Is there as current list to get on to get in line to buy one? How do I get  
>>a kit  
>>when I'm ready to buy?  
>>  
>>Thanks  
>>Larry WA0GWA  
>  
>There are currently a small number in stock waiting for an order. When  
>these are sold, you will need to wait for the next build, when ???  
>  
>Don't wait - get one NOW :-)  
>  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org  
-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
Campbell University

---

## 76. Re: [DSP-93:1027] RE: Just checking

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 10 Jul 1995 16:43:32 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507102143.QAA21025@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Dorothy had oral surgery middle of last week - so the office slowed down a little on shipping. I believe they are more than half-way thorough in shipping process.

Cheers - Greg

According to j.d.melton.slh0613@oasis.icl.co.uk:  
>  
> Ron, still waiting for kit to arrive. I guess they take a  
> little longer to get to the UK.  
>

> John Melton, g0orx/n6lyt  
>  
>  
>

---

## 77. Re: [DSP-93:1031] RE: Just checking

From: chbrain@dircon.co.uk (Charles Brain)  
Date: Tue, 11 Jul 1995 05:45:30 +0100  
To: dsp-93@tapr.org  
Message-ID: <199507110634.AA01292@felix.dircon.co.uk>  
Rendered body type: text/plain

>> Ron, still waiting for kit to arrive. I guess they take a  
>> little longer to get to the UK.  
>>  
>> John Melton, g0orx/n6lyt

Well mine arrived in Chelmsford Essex yesterday 10 th July.

Regards Charles G4GU0

-----  
"projects don't slip, they just catch up with reality"

Charles Brain (G4GU0)  
Chelmsford, Essex.  
E-mail chbrain@dircon.co.uk  
POTS +44 (0)1245 353221  
FAX +44 (0)1245 275448  
-----

---

## 78. TI FTP site?

From: Tim Baggett <tim@NMSU.Edu>  
Date: Tue, 11 Jul 1995 12:31:34 -0600 (MDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950711123002.12941A-100000@wilma>  
Rendered body type: text/plain

Does anyone know where I can find a library of free TI assembly routines  
(preferably ready to be called from C)? I'm working on the TMS320C31.

Thanks

Tim, AA5DF

New Mexico State University, Las Cruces, NM  
Internet: tim@nmsu.edu  
AMPRnet: aa5df@armstrong.ampr.org

---

## 79. Re: [DSP-93:1033] TI FTP site?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 11 Jul 1995 13:45:54 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac287688d5ab@[204.96.0.132]>  
Rendered body type: text/plain

>Does anyone know where I can find a library of free TI assembly routines  
>(preferably ready to be called from C)? I'm working on the TMS320C31.  
>  
>Thanks  
>  
>Tim, AA5DF  
>  
>New Mexico State University, Las Cruces, NM  
>Internet: tim@nmsu.edu  
>AMPRnet: aa5df@armstrong.ampr.org

Start with TI's DSP Web page <http://www.ti.com/sc/docs/dsprs/dsphome.htm>

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 80. Re: [DSP-93:1033] TI FTP site?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 11 Jul 1995 14:10:33 -0500

To: dsp-93@tapr.org  
Message-ID: <v02120d01ac287cef5689@[204.181.160.68]>  
Rendered body type: text/plain  
>Does anyone know where I can find a library of free TI assembly routines  
>(preferably ready to be called from C)? I'm working on the TMS320C31.  
>  
>Thanks  
>  
>Tim, AA5DF  
>  
>New Mexico State University, Las Cruces, NM  
>Internet: tim@nmsu.edu  
>AMPRnet: aa5df@armstrong.ampr.org

Also try ftp://ftp.ti.com/mirrors/tms320bbs

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 81. Re: [DSP-93:1035] Re: TI FTP site?

From: chbrain@dircon.co.uk (Charles Brain)  
Date: Tue, 11 Jul 1995 19:29:39 +0100  
To: dsp-93@tapr.org  
Message-ID: <199507112019.AA27484@felix.dircon.co.uk>  
Rendered body type: text/plain  
>>Does anyone know where I can find a library of free TI assembly routines  
>>(preferably ready to be called from C)? I'm working on the TMS320C31.  
  
Or even ftp.ti.com !  
under /mirrors/tms320

-----  
"projects don't slip, they just catch up with reality"

Charles Brain (G4GU0)  
Chelmsford, Essex.  
E-mail chbrain@dircon.co.uk  
POTS +44 (0)1245 353221  
FAX +44 (0)1245 275448  
-----

---

## 82. DSP software dev. topic

From: "Johan Forrer" <FORRERJ@frl.orst.edu>  
Date: Wed, 12 Jul 1995 10:43:54 PST8PDT  
To: dsp-93@tapr.org  
Message-ID: <509354E5672@frl.orst.edu>  
Rendered body type: text/plain

Hi all DSP-93 software developers,

First: Is this an appropriate place to discuss DSP-93 software topics?  
I would like to propose a project that may be of much interest to all that  
use the DSP-93 as a modem. This is roughly the gist of it:

Presently one need to use a disconnect header on a TNC to interface the  
DSP-93. It would be really nice if the DSP-93 could take care of the HDLC  
and KISS interface in software and then let the PC and DSP talk to each  
other directly, i.e., it will be the DSP-93, the PC, and NOS (or other KISS  
program if you wish). I have just completed an article (to be published  
in the near future) on how we do this with the new Motorola DSP56002EVM  
and think that the idea can be migrated to the DSP-93. This could  
perhaps also be a necessary step along the way to initiate work on  
including ECC principles, such as Phil Karn's Viterbi code, into the  
mainstream DSP code.

If this topic is not relevant for this forum, please let me know.  
Otherwise, any feedback, suggestions, or flames, are welcome. Also - if you  
have experience in this regard, let us hear from you too. Offers of  
help/assistance would be welcome.

Thanks much,

Johan Forrer, KC7WW

---

### 83. Re: [DSP-93:1037] DSP software dev. topic

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 12 Jul 1995 12:56:33 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507121756.MAA13126@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Hi Johan -- how goes the defense ?

The topic you suggest is open game for this conf. We merged the DSP conf into the the dsp-93 conf several month ago for that reason we didn't need two conferences talking about dsp development.

The hope is that while this is a dsp-93 support group, that after builders are on the group and have their units built, software discussion will follow.

You finally did get your unit from Bob I hope.

Cheers - Greg

According to Johan Forrer:

>  
> Hi all DSP-93 software developers,  
>  
> First: Is this an appropriate place to discuss DSP-93 software topics?  
> I would like to propose a project that may be of much interest to all that  
> use the DSP-93 as a modem. This is roughly the gist of it:  
>  
> Presently one need to use a disconnect header on a TNC to interface the  
> DSP-93. It would be really nice if the DSP-93 could take care of the HDLC  
> and KISS interface in software and then let the PC and DSP talk to each  
> other directly, i.e., it will be the DSP-93, the PC, and NOS (or other KISS  
> program if you wish). I have just completed an article (to be published  
> in the near future) on how we do this with the new Motorola DSP56002EVM  
> and think that the idea can be migrated to the DSP-93. This could  
> perhaps also be a necessary step along the way to initiate work on  
> including ECC principles, such as Phil Karn's Viterbi code, into the  
> mainstream DSP code.  
>  
> If this topic is not relevant for this this forum, please let me know.  
> Otherwise, any feedback, suggestions, or flames, are welcome. Also - if you  
> have experience in this regard, let us hear from you too. Offers of  
> help/assistance would be welcome.  
>  
>  
> Thanks much,  
>  
> Johan Forrer, KC7WW  
>  
>  
>

---

### 84. DSP-93

From: robertsm@jsc.mil  
Date: Wed, 12 Jul 1995 14:12:48 -0400  
To: dsp-93@tapr.org  
Message-ID: <95Jul12.141239edt.29445@annap2.jsc.mil>  
Rendered body type: text/plain

Received my DSP-93 yesterday. Noticed that the Assembly manual mentions a note to ICOM users on page 36, but there is no mention of ICOM transceivers. Can someone provide the missing note?

Thanks, Mel W3MR robertsm@jsc.mil

---

### 85. DSP software dev. topic

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 12 Jul 1995 14:30:45 -0400  
To: dsp-93@tapr.org  
Message-ID: <199507121830.OAA07497@camel.campbell.edu>  
Rendered body type: text/plain

Hi Johan,

This is \*THE\* place for discussions like this. We welcome such projects to this forum. There is the DSP-93 developers group, too. You might ask Greg, TAPR Pres. about joining that group, too (dsp9dev group).

The code sounds neat. I can offer help on the software beta-testing end. Other than that, I am out of my league. If you get something that needs to be tested, just ask and I will do what I can.

```
>Hi all DSP-93 software developers,
>
>First: Is this an appropriate place to discuss DSP-93 software topics?
>I would like to propose a project that may be of much interest to all that
>use the DSP-93 as a modem. This is roughly the gist of it:
//SNIP//
>If this topic is not relevant for this forum, please let me know.
>Otherwise, any feedback, suggestions, or flames, are welcome. Also - if you
>have experience in this regard, let us hear from you too. Offers of
>help/assistance would be welcome.
>
>
>Thanks much,
>
>Johan Forrer, KC7WW

Mark L. Hammond, Ph. D. (KC4EBR)
Campbell University
```

---

## 86. Re: [DSP-93:1039] DSP-93

```
From: w5rkn@amsat.org (Ronald G. Parsons)
Date: Wed, 12 Jul 1995 14:01:41 -0500
To: dsp-93@tapr.org
Message-ID: <v02120d01ac29cc3b1d58@[204.96.0.99]>
Rendered body type: text/plain
```

```
>Received my DSP-93 yesterday. Noticed that the Assembly manual
>mentions a note to ICOM users on page 36, but there is no mention of
>ICOM transceivers. Can someone provide the missing note?
> Thanks, Mel W3MR robertsm@jsc.mil
```

I assume what you are referring to is the item in the Table of Contents on page 1. Ignore that. I guess that got left in from the previous version. I'll put a note in the Build Update.

Sorry.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 87. Re: [DSP-93:1037] DSP software dev. topic

```
From: w5rkn@amsat.org (Ronald G. Parsons)
Date: Wed, 12 Jul 1995 14:26:15 -0500
To: dsp-93@tapr.org
Message-ID: <v02120d02ac29d16e5612@[204.96.0.99]>
Rendered body type: text/plain
```

Johan,

Glad to hear from you. This is the place. Some of the modems in the DSP-93 suite already do this. Unfortunately, for the 9600 bps modems, there is only about a microsecond of free time at each sample. I doubt that there is enough time to execute the required code. For the 1200 bps modems, there should be plenty of time.

Good project.

Ron W5RKN

```
>Hi all DSP-93 software developers,
>
>First: Is this an appropriate place to discuss DSP-93 software topics?
>I would like to propose a project that may be of much interest to all that
>use the DSP-93 as a modem. This is roughly the gist of it:
>
>
> Presently one need to use a disconnect header on a TNC to interface the
>DSP-93. It would be really nice if the DSP-93 could take care of the HDLC
```



>and KISS interface in software and then let the PC and DSP talk to each  
>other directly, i.e., it will be the DSP-93, the PC, and NOS (or other KISS  
>program if you wish). I have just completed an article (to be published  
>in the near future) on how we do this with the new Motorola DSP56002EVM  
>and think that the idea can be migrated to the DSP-93. This could  
>perhaps also be a necessary step along the way to initiate work on  
>including ECC principles, such as Phil Karn's Viterbi code, into the  
>mainstream DSP code.  
>  
>If this topic is not relevant for this forum, please let me know.  
>Otherwise, any feedback, suggestions, or flames, are welcome. Also - if you  
>have experience in this regard, let us hear from you too. Offers of  
>help/assistance would be welcome.  
>  
>  
>Thanks much,  
>  
>Johan Forrer, KC7WW

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 88. Re: [DSP-93:1041] Re: DSP-93

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 12 Jul 1995 15:31:18 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507122031.PAA24468@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Yeah - we dropped the comment, but I didn't get all the  
references out. Always a problem with doing documents.

The comment was in regards to an error in the first version of the boards,  
which was corrected in this run.

Greg

According to Ronald G. Parsons:

>  
> >Received my DSP-93 yesterday. Noticed that the Assembly manual  
> >mentions a note to ICOM users on page 36, but there is no mention of  
> >ICOM transceivers. Can someone provide the missing note?  
> > Thanks, Mel W3MR robertsm@jsc.mil  
>  
> I assume what you are referring to is the item in the Table of Contents on  
> page 1. Ignore that. I guess that got left in from the previous version.  
> I'll put a note in the Build Update.  
>  
> Sorry.  
>  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

---

## 89. Re: [DSP-93:1042] Re: DSP software dev. topic

From: "Johan Forrer" <FORRERJ@frl.orst.edu>  
Date: Wed, 12 Jul 1995 17:08:38 PST8PDT  
To: dsp-93@tapr.org  
Message-ID: <50F9F467122@frl.orst.edu>  
Rendered body type: text/plain

Ron,

> Glad to hear from you. This is the place. Some of the modems in the DSP-93  
> suite already do this. Unfortunately, for the 9600 bps modems, there is  
> only about a microsecond of free time at each sample. I doubt that there  
> is  
> enough time to execute the required code. For the 1200 bps modems, there  
> should be plenty of time.  
>  
> Good project.  
>

Could you give me a hint on which programs does and which not. Why does some do and others not? I suspect it is application specific.

> Ron W5RKN  
>

Re: 9600 baud code - I assume you are talking about the impact of the decimator - I'll have look at the cycle budget and see what's possible. Thanks for the hint.

One thing that is really needed for this kind of work is a form of DSP kernel, i.e., SPOX or equivalent. Anyone have any ideas on what is available for use with DSP-93?

--Johan

---

## 90. SRAM Chips

From: ROBERTSM@jsc.mil  
Date: Wed, 12 Jul 1995 20:55:21 -0400  
To: dsp-93@tapr.org  
Message-ID: <95Jul12.210314edt.29446@annap2.jsc.mil>  
Rendered body type: text/plain

Question:

Received 4 HP93C9509 M628032-20PSI chips with the DSP-93 kit. I am assuming that they replace the 71256S20TP SRAMs. Is this a correct assumption?

73 Mel W3MR      robertsm@jsc.mil

---

## 91. U0-11

From: dmedley@indirect.com (David Medley)  
Date: Wed, 12 Jul 1995 20:16:17 -0700  
To: DSP-93@tapr.org  
Message-ID: <199507130316.UAA13945@bud.indirect.com>  
Rendered body type: text/plain

Frank or anybody out there has any thought been given to a U0-11 package. I used to monitor it some years ago and there was interesting stuff on it. I think it is still going strong. I have the relevant characteristics here somewhere if you need them.  
73 de Dave KI6QE

---

## 92. Re: [DSP-93:1025] Just checking

From: rcox@holli.com (Ron Cox)  
Date: Wed, 12 Jul 1995 22:47:30 -0600  
To: dsp-93@tapr.org  
Message-ID: <ac2a53f600021004de0f@[198.70.38.168]>  
Rendered body type: text/plain

Ron,

My kit arrived here in Kokomo Indiana Monday July 10th. I plan to start the build over the weekend (July 15th). I was very impressed with the quality of the parts, packing and documentation as I looked through the box sorting out the packing material.

Looks like a first class kit!

Ron Cox  
W9KFB  
rcox@holli.com

---

## 93. Re: New Soft

From: Toni Fernandez <Toni.Fernandez@p111.radio.encomix.com>  
Date: Tue, 11 Jul 95 10:55:47 +0000  
To: "dsp-93@tapr.org" <dsp-93@tapr.org> f3.n342.z2.fidonet.org>  
Message-ID: <2521116880@p111.f17.n341.z2.ftn>  
Rendered body type: text/plain

Hi Bob, Ron and Mark,

Thank you very much for your help. I downloaded the images of the

two distribution diskettes from the ftp site.

BTW, don't you think it would be interesting to include the operations and developers guide in the diskettes?

Toni, ea4le

-----  
toni.fernandez@radio.encomix.com  
ea4le@amsat.org  
Compuserve 100341,640  
-----

---

#### 94. Re: [DSP-93:1045] SRAM Chips

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 13 Jul 1995 01:27:56 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507130627.BAA04771@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Yes.

greg

According to ROBERTSM@jsc.mil:

>  
> Question:  
> Received 4 HP93C9509 M628032-20PSI chips with the DSP-93 kit. I am  
> assuming that they replace the 71256S20TP SRAMs. Is this a correct  
> assumption?  
> 73 Mel W3MR robertsm@jsc.mil  
>  
>

---

#### 95. Re: [DSP-93:1047] Re: Just checking

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 13 Jul 1995 01:32:38 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507130632.BAA11358@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Thanks for the comments Ron - we work hard on putting a good kit together -- although sometime I think I am going to die on parts at times.

Hope the build goes as well as it looks :-)

Cheers - Greg, WD5IVD

According to Ron Cox:

>  
> Ron,  
>  
> My kit arrived here in Kokomo Indiana Monday July 10th. I plan to start the  
> build over the weekend (July 15th). I was very impressed with the quality  
> of the parts, packing and documentation as I looked through the box sorting  
> out the packing material.  
>  
> Looks like a first class kit!  
>  
>  
> Ron Cox  
> W9KFB  
> rcox@holli.com  
>  
>  
>

---

#### 96. Re: [DSP-93:1048] Re: New Soft

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 13 Jul 1995 07:22:32 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac2ac0517402@[204.96.0.78]>  
Rendered body type: text/plain

>Hi Bob, Ron and Mark,

>

>Thank you very much for your help. I downloaded the images of the

>two distribution diskettes from the ftp site.  
>  
>BTW, don't you think it would be interesting to include the operations  
>and developers guide in the diskettes?  
>  
>Toni, ea4le

I doubt that there is (or will be as time goes on) room on the diskettes. Mark?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 97. Re: [DSP-93:1046] UO-11

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 13 Jul 1995 12:24:05 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507131229.IAA14255@camel.campbell.edu>  
Rendered body type: text/plain

Dave,

Yes, Frank has already written the DSp-93 code for UO-11 telem demod!

How's that for some "thought"!

>Frank or anybody out there has any thought been given to a UO-11 package.  
>I used to monitor it some years ago and there was interesting stuff on it.  
>I think it is still going strong. I have the relevant characteristics here  
>somewhere if you need them.  
>73 de Dave KI6QE  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 98. Re: [DSP-93:1044] Re: DSP software dev. topic

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 13 Jul 1995 07:30:56 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d03ac2ac1ebd428@[204.96.0.78]>  
Rendered body type: text/plain

>Ron,  
>  
>> Glad to hear from you. This is the place. Some of the modems in the DSP-93  
>> suite already do this. Unfortunately, for the 9600 bps modems, there is  
>> only about a microsecond of free time at each sample. I doubt that there  
>is  
>> enough time to execute the required code. For the 1200 bps modems, there  
>> should be plenty of time.  
>>  
>> Good project.  
>>  
>  
>  
>Could you give me a hint on which programs does and which not. Why  
>does some do and others not? I suspect it is application specific.

I'd suggest you look at the doc files in the DOC directory on the  
distribution diskettes.

>  
>> Ron W5RKN  
>>  
>  
>

>Re: 9600 baud code - I assume you are talking about the impact of the  
>decimator - I'll have look at the cycle budget and see what's possible.  
>Thanks for the hint.

The 1 microsecond will suport about 10 TMC320 cycles, so just a few  
instructions could be added.

>One thing that is really needed for this kind of work is a form  
>of DSP kernel, i.e., SPOX or equivalent. Anyone have any ideas

>on what is available for use with DSP-93?

Can you explain this question, please. What is SPOX?

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 99. Re: New Soft

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 13 Jul 1995 13:09:07 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507131313.JAA14384@camel.campbell.edu>  
Rendered body type: text/plain

Currently, there might be room. When we add more code, the disks will be full.

If (when?) we go to 1.44Meg diskettes, there will be room. But with ALL the wonderful code you all are working on ;-) I hope we have to keep on squeezing!

Glad you got the diskettes OK, Toni. Isn't the internet wonderful?!

>>Hi Bob, Ron and Mark,  
>>  
>>Thank you very much for your help. I downloaded the images of the  
>>two distribution diskettes from the ftp site.  
>>  
>>BTW, don't you think it would be interesting to include the operations  
>>and developers guide in the diskettes?  
>>  
>>Toni, ea4le  
>  
>I doubt that there is (or will be as time goes on) room on the diskettes. Mark?  
>  
>  
>Ron W5RKN  
>  
>also:  
>w5rkn@amsat.org  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 100. Kit complete

From: cstampf@mhv.net  
Date: Thu, 13 Jul 95 11:59:14 PDT  
To: dsp-93@tapr.org  
Message-ID: <Chameleon.4.01.2.950713120306.cstampf@cstampf.mhv.net>  
Rendered body type: text/plain

Just got my kit and checked all contents. Boy, you folks have done a fine job. No parts were missing and a beautiful package. I hope to start construction this weekend.  
Thanks.....  
Charlie, N2CJ

---

## 101. Cannot read progguid.wor

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@vm.gmd.de>  
Date: Thu, 13 Jul 95 18:20:02 EST  
To: <dsp-93@TAPR.ORG>  
Message-ID: <199507131621.LAA12310@dingus.n5lyt.datarace.com>  
Rendered body type: text/plain

Hi  
I have downloaded the file progguid.wor using NETSCAPE,  
from the WWW server and can read most of it as an ASCII file.  
When trying to read it from Word 2.0 or Word 6 it always fails.  
What is wrong?  
Boris Smeds

End of Message

---

## 102. Re: [DSP-93:1056] Cannot read progguid.wor

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 13 Jul 1995 12:22:29 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac2b068bf3ea@[204.96.0.78]>  
Rendered body type: text/plain

>Hi  
>I have downloaded the file progguid.wor using NETSCAPE,  
>from the WWW server and can read most of it as an ASCII file.  
>When trying to read it from Word 2.0 or Word 6 it always fails.  
>What is wrong?  
>Boris Smeds  
>  
>End of Message

Are you SURE that binary mode ftp transfer was used. If not, you will get the results you see. Use Word 5 or 6.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 103. Re: [DSP-93:1057] Re: Cannot read progguid.wor

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 13 Jul 1995 12:58:29 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507131758.MAA17681@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Ron - I just looked at it - and NETSCAPE brought it up as a page, instead of downloading it as a file. Not sure why.

I just tested to make sure that having .word on the end was not the problem. It wasn't. NETSCAPE still try to display the file in a page.

Greg

According to Ronald G. Parsons:

>  
> >Hi  
> >I have downloaded the file progguid.wor using NETSCAPE,  
> >from the WWW server and can read most of it as an ASCII file.  
> >When trying to read it from Word 2.0 or Word 6 it always fails.  
> >What is wrong?  
> >Boris Smeds  
> >  
> >End of Message  
>  
>  
> Are you SURE that binary mode ftp transfer was used. If not, you will get  
> the results you see. Use Word 5 or 6.  
>  
>  
> Ron W5RKN  
>  
> also:  
> w5rkn@amsat.org  
>  
>  
>

---

### 104. UO-11

From: dmedley@indirect.com (David Medley)  
Date: Thu, 13 Jul 1995 11:28:35 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507131828.LAA18075@bud.indirect.com>  
Rendered body type: text/plain

Ron which is the package that decodes UO-11 telemetry?  
Dave KI6QE

---

### 105. Re: [DSP-93:1058] Re: Cannot read progguid.wor

From: "Tim \"FLARE!\" Baggett" <tim@NMSU.Edu>  
Date: Thu, 13 Jul 1995 12:32:05 -0600 (MDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950713122804.16703B-100000@wilma>

Rendered body type: text/plain

On Thu, 13 Jul 1995, Greg Jones wrote:

> Ron - I just looked at it - and NETSCAPE brought it up as a page, instead of  
> downloading it as a file. Not sure why.  
>  
> Greg

Greg,

I usually use Netscape in this manner to view images, etc. If you want to download it as a file, click on FILE, then click on SAVE AS. Also if you want to save an image on a web page you are viewing, then position the mouse on the image and hit the right button.

I'm using the new Netscape BTW - Version 1.1N for windows.

<http://aloha.nmsu.edu/w5gb>

Tim, AA5DF

New Mexico State University, Las Cruces, NM  
Internet: [tim@nmsu.edu](mailto:tim@nmsu.edu)  
AMPRnet: [aa5df@armstrong.ampr.org](mailto:aa5df@armstrong.ampr.org)

---

### 106. [DSP-93:1060] Re: Cannot read progguid.wor

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@vm.gmd.de>  
Date: Thu, 13 Jul 95 21:49:34 EST  
To: <dsp-93@TAPR.ORG>  
Message-ID: <199507131950.0AA16418@dingus.n5lyt.datarace.com>  
Rendered body type: text/plain

Thanks Tim for your reply,  
but my problem remains. I did save the file from NETSCAPE (V1.0 N)  
and it is stored on my PC disk as progguid.wor . Since it is said  
to be a WORD file I later opened the file from both Word 2.0 ,  
Word 6, different versions of WordPerfect but none of them  
would recognise the file. Only by reading it as an ASCII file  
I can see the text with some format data and font data.

Boris SM0GJ, DJ0EX

End of Message

---

### 107. Re: [DSP-93:1061] Re: Cannot read progguid.wor

From: "Tim \"FLARE!\" Baggett" <tim@NMSU.Edu>  
Date: Thu, 13 Jul 1995 14:08:40 -0600 (MDT)  
To: [dsp-93@tapr.org](mailto:dsp-93@tapr.org)  
Message-ID: <Pine.SUN.3.91.950713140739.16703G-100000@wilma>  
Rendered body type: text/plain

On Thu, 13 Jul 1995, Smeds, Boris wrote:

>  
> Thanks Tim for your reply.  
> but my problem remains. I did save the file from NETSCAPE (V1.0 N)  
> and it is stored on my PC disk as progguid.wor . Since it is said

I may be confused about what you are trying, but Microsoft Word documents  
usually have a .doc extension.

What is the URL and I'll try to load the file into Word here at school

Tim, AA5DF

New Mexico State University, Las Cruces, NM  
Internet: [tim@nmsu.edu](mailto:tim@nmsu.edu)  
AMPRnet: [aa5df@armstrong.ampr.org](mailto:aa5df@armstrong.ampr.org)

---

### 108. Re: [DSP-93:1061] Re: Cannot read progguid.wor

From: "Tim \"FLARE!\" Baggett" <tim@NMSU.Edu>  
Date: Thu, 13 Jul 1995 15:05:05 -0600 (MDT)  
To: "Smeds, Boris" <BSMEDS%ESOC.BITNET@vm.gmd.de>  
Cc: [dsp-93@tapr.org](mailto:dsp-93@tapr.org)  
Message-ID: <Pine.SUN.3.91.950713145943.22143C-100000@wilma>

Rendered body type: text/plain

On Thu, 13 Jul 1995, Smeds, Boris wrote:

>  
> Thanks Tim for your reply,  
> but my problem remains. I did save the file from NETSCAPE (V1.0 N)  
> and it is stored on my PC disk as progguid.wor . Since it is said

Hi Boris et al,

I just used netscape 1.1N from windows and viewed the ProgGuide.word at  
ftp://ftp.tapr.org/tapr/dsp93/manuals/ProgGuide.word

Greg, my Netscape showed the file on the screen as well, complete with  
the control code characters. I then clicked on FILE at the top left of  
the window, then clicked on SAVE AS. I did not save the file as  
'proguid.wor' as Netscape will try to save it as, instead I saved it as  
'proguid.doc'. Microsoft Word 6.0 had no trouble loading the document.

Hope this helps someone. It looks like the file on the FTP site should be  
renamed with a .doc extension. I will ftp my doc file that I was able to  
load onto wilma.nmsu.edu into the /incoming directory for anonymous FTP  
if anyone wants to get it there. I can't guarantee how long it will  
remain there.

Oh, thanks for those who responded to my requests for TI's site of source  
code for the TMS series. I am now finishing up some modifications to a  
FIR routine that can be called from C.

73

Tim, AA5DF

New Mexico State University, Las Cruces, NM  
Internet: tim@nmsu.edu  
AMPRnet: aa5df@armstrong.ampr.org

---

## 109. Re: [DSP-93:1058] Re: Cannot read progguid.wor

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 13 Jul 1995 16:27:17 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac2b3f995b87@[204.96.0.141]>  
Rendered body type: text/plain

Greg,

I just created a Netscape Preferences/Helper Applications Mime Type for the  
extension .word with Action: Save.

Worked like a charm. Downloaded it to a folder of my choice.

Ron

>Ron - I just looked at it - and NETSCAPE brought it up as a page, instead of  
>downloading it as a file. Not sure why.  
>  
>I just tested to make sure that having .word on the end was not the problem.  
>It wasn't. NETSCAPE still try to display the file in a page.  
>  
>Greg

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 110. Re: [DSP-93:1052] Re: UO-11

From: Carol Byers <crlbyers@garlic.com>  
Date: Thu, 13 Jul 1995 14:28:11 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950713142717.9356A-100000@garlic.com>  
Rendered body type: text/plain

How do you get all of this wonderfull software?

On Thu, 13 Jul 1995, Mark L. Hammond wrote:



> Dave,  
>  
> Yes, Frank has already written the DSp-93 code for U0-11 telem demod!  
>  
> How's that for some "thought"!  
>  
> >Frank or anybody out there has any thought been given to a U0-11 package.  
> >I used to monitor it some years ago and there was interesting stuff on it.  
> >I think it is still going strong. I have the relevant characteristics here  
> >somewhere if you need them.  
> >73 de Dave KI6QE  
> >  
> >  
> >  
> >  
> Mark L. Hammond [KC4EBR]  
>  
>

---

### 111. Re: [DSP-93:1059] UO-11

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 13 Jul 1995 16:29:10 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac2b408993ca@[204.181.160.12]>  
Rendered body type: text/plain  
  
>Ron which is the package that decodes U0-11 telemetry?  
>Dave KI6QE

Mark, you said it. You answer him :-)

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 112. Re: [DSP-93:1061] Re: Cannot read progguid.wor

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 13 Jul 1995 16:33:10 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac2b4158c451@[204.181.160.12]>  
Rendered body type: text/plain  
  
>Thanks Tim for your reply,  
>but my problem remains. I did save the file from NETSCAPE (V1.0 N)  
>and it is stored on my PC disk as progguid.wor . Since it is said  
>to be a WORD file I later opened the file from both Word 2.0 ,  
>Word 6, different versions of WordPerfect but none of them  
>would recognise the file. Only by reading it as an ASCII file  
>I can see the text with some format data and font data.  
>  
>Boris SM0GJ, DJ0EX  
>  
>End of Message

If Netscape is giving you a problem, do a plain old ftp binary transfer using whatever ftp program you have.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 113. Re: [DSP-93:1063] Re: Cannot read progguid.wor

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 13 Jul 1995 16:41:35 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac2b42cd1bcb@[204.181.160.12]>  
Rendered body type: text/plain  
  
Tim,

>Hope this helps someone. It looks like the file on the FTP site should be  
>renamed with a .doc extension.

Greg and I discussed this before we put it up. Remember we must serve others besides Windows users and the .doc suffix doesn't convey any information that is understandable to everyone. While .word may not be universally understandable, that's what we decided on.

In any case, this will soon become a pdf file and all this nonsense will be irrelevant.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 114. about UO-11 code

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 14 Jul 1995 02:02:40 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507140207.WAA17256@camel.campbell.edu>  
Rendered body type: text/plain

Guys,

Frank released a version of his UO-11 telemetry demodulator code to the developers group in late June. I have emailed him to make sure it is okay for me to post to the public.

As soon as I get the okay (ASSuMEing I get an ok!) I will post and tell you what it is called, and where it is. Until then, hang tight....

>Ron which is the package that decodes UO-11 telemetry?  
>Dave KI6QE  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 115. Re: [DSP-93:1046] UO-11

From: fperkins@onramp.net  
Date: Thu, 13 Jul 1995 23:00:24 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507140400.XAA22356@ns.onramp.net>  
Rendered body type: text/plain

Howdy,

I have a beta version of the uo-11 demod. I will send you a copy this weekend.

73 Frank WB5IPM

---

## 116. One more question

From: ROBERTSM@jsc.mil  
Date: Thu, 13 Jul 1995 21:30:36 -0400  
To: dsp-93@tapr.org  
Message-ID: <95Jul14.062630edt.29445@annap2.jsc.mil>  
Rendered body type: text/plain

One more question:

Page 23 of the Assembly manual-Reset button  
The instructions say to solder the wires to the two holes located next to the word RESET near the upper right corner of board 1. There are four holes above the word RESET, and two to the right of RESET.  
Which holes are correct for the reset wires?  
Thanks, Mel W3MR robertsm@jsc.mil

---

## 117. Printing the Programming Guide.

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@vm.gmd.de>  
Date: Fri, 14 Jul 95 12:57:45 EST  
To: <dsp-93@TAPR.ORG>  
Message-ID: <199507141058.FAA26619@dingus.n5lyt.datarace.com>  
Rendered body type: text/plain

Finally I have a readable paper copy of the Programming Guide.

I used PC-NFS FTP program to transfer the file progguid.word  
in binary mode from  
ftp.tapr.org/tapr/dsp93/manuals

The file is then readable in WORD 6.0 on the screen.  
Printing on DIN A4 size paper on a HP Laserjet 4 (Postscript)  
now fails due to paper size incompatibility.

After reformatting the document to A4 size pages, it prints  
up to and including the picture. The rest comes out blank.

The cure is to force a page break after the picture to  
get the rest of the text.

Hope this information could be helpful to users with  
A4 size paper.

Boris

End of Message

---

## 118. Re: [DSP-93:1071] One more question

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 14 Jul 1995 06:59:08 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac2c0bb34f4c@[204.181.160.88]>  
Rendered body type: text/plain

>One more question:  
> Page 23 of the Assembly manual-Reset button  
>The instructions say to solder the wires to the two holes located next  
>to the word RESET near the upper right corner of board 1. There are  
>four holes above the word RESET, and two to the right of RESET.  
>Which holes are correct for the reset wires?  
> Thanks, Mel W3MR robertsm@jsc.mil

The June production model I saw had the reset lines connected to the "two  
to the right of RESET" although I believe that the four hole set can also  
be used. The four pads are two sets of two. Use one of each set, i.e., the  
two inner ones or the two outer ones.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 119. UO-11 beta code posted

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 14 Jul 1995 13:20:52 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507141325.JAA22762@camel.campbell.edu>  
Rendered body type: text/plain

Hi Gang,

Thanks to Frank, I have posted his UO-11 telem. code. Look for  
uo93t.zip in the upload subdirectory. It has versions for both radio  
ports 1 and 2. Below is his uo93t.txt file that is included in the .zip file.

-----  
June 25, 1995

Hi Gang,

Here is the DSP-93 demod for UO-11 telemetry. You receive on FM,  
at 145.825 MHz  $\pm$  doppler. I find tuning fairly critical, so keep  
an eye on discriminator centering.

All you need to hook up is input audio. The data is output directly  
from the DSP-93 UART, so you don't use the TNC with this program.  
Note that the DSP-93 UART to PC link runs at 19.2 kbps, with 8 data  
bits, one stop bit and no parity (standard DSP-93 setup). The demod  
translates UO-11 data sent at 1200 bps, 7 data bits, even parity,  
and two stop bits.

LEDs:

1           not used  
2           data sync detect

3           not used  
4           not used  
5           DCD (off true)  
6           signal level  
7           program duty cycle (program running)

Adjust the input level on LED 6 for 10-25% brightness. You should see LED 2 ON steadily when receiving a good signal from U0-11.

I copy using PROCOMM. Any standard terminal program should do.

On a strong signal copy is pretty good.

Files:

uo93t1.obj       radio port 1  
uo93t2.obj       radio port 2

73 Frank WB5IPM

#### License and Disclaimer

A no cost, non-exclusive license to use the enclosed software is granted to all users of the TAPR/AMSAT DSP-93 DSP computer, with the restriction that it be used only for non-commercial amateur radio applications. ALL other uses are prohibited under this license. Copyright 1991, 1992, 1993, 1994, and 1995, Frank H. Perkins, Jr., WB5IPM. All rights reserved.

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Never use this software under circumstances where its failure to operate or its failure to operate as expected, or the failure of the attendant hardware could create a dangerous situation, cause loss of data, or could cause damage to your amateur radio equipment, computer equipment, or any other equipment or property.

Please contact Greg Jones at TAPR or the author for information on commercial licenses of this software.

Frank H. Perkins, Jr.

Mark L. Hammond   [KC4EBR]

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## 120. DCC Paper Deadline!

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 14 Jul 1995 13:40:11 -0500 (CDT)  
To: tapr-bb@tapr.org (TAPR-BB mailing), netsig@tapr.org (NETSIG mailing),  
bbssig@tapr.org (BBS SIG mailing), hfsig@tapr.org (HF SIG mailing),  
dsp-93@tapr.org (DSP-93 Build), aprssig@tapr.org (BBS SIG mailing),  
amsat-bb@amsat.org (AMSAT BB Mail Group)  
Message-ID: <199507141840.NAA28968@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Don't forget -- Friday, July 21st! Deadline for ARRL DCC Article Submissions  
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\* Anyone interested in digital communications is invited to submit a paper for publication in the Conference Proceedings. Articles are welcome on any aspect of digital communications.

\* Presentation at the Conference is not required for publication.

\* Papers are due by July 21, 1995, and should be submitted to  
Maty Weinberg, ARRL, 225 Main Street, Newington, CT 06111 or via the  
Internet to mweinberg@arrl.org

\* Please contact Maty for detailed format requirements.

\* It is not too late to start writing!

---

If you think you will be late in submitting your paper(s), contact Maty to arrange details.

---

14th Annual ARRL Digital Communications Conference  
September 8-10th, 1995  
Arlington, Texas (minutes from DFW airport)

The ARRL Digital Communications Conference is an international forum for radio amateurs in digital communications, networking, and related technologies to meet, publish their work, and present new ideas and techniques for discussion. Presenters and attendees will have the opportunity to exchange ideas and learn about recent hardware and software advances, theories, experimental results, and practical applications. The Digital Communications Conference is not just for the digital elite, but for digitally-orientated amateurs of all levels of experience.

For further information:

E-Mail: TAPR@TAPR.ORG  
Web : <http://www.tapr.org/tapr>  
ftp : [ftp://ftp.tapr.org/tapr/95\\_DCC\\_Flyer.pdf](ftp://ftp.tapr.org/tapr/95_DCC_Flyer.pdf)

-----  
Tucson Amateur Packet Radio  
8987-309 E Tanque Verde Rd #337 \* Tucson, Az \* 85749-9399 \* 817-383-0000

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## 121. DSP-93?

From: n7ryw@teleport.com (William Roth)  
Date: Fri, 14 Jul 1995 16:38:12 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507142337.QAA23341@desiree.teleport.com>  
Rendered body type: text/plain

I am (again) contemplating the purchase of a DSP-93. The last time I looked into this unit, I had a few concerns that were not yet addressed. I have looked at the WWW page, and I still have some of them. Here they are...

1. Is it really "Open"? Apparently, only some of the modems have source code available, but I might have been reading the WWW page wrong. Most notably, the 9600 full duplex and Windows Interface seemed to be proprietary. Is this really true? If so, it is no better than the DSP-12 I already have, and certainly not "Open".

2. It used to have the TNC part left out. This was a glaring omission. Is the TNC now included, or is it still incomplete?

3. The modems had to be manually reloaded before, such as from 9600 full duplex to 1200 bps afsk (terrestrial). Is the modem code now on-board and internally loaded to the DSP on a mode-switching command?

4. The ordering procedure. I understand that Amsat and Tapr don't want to fund the batch purchases needed to keep these units in stock. But, when I asked about a couple of issues that would help to assure me that my investment was safe, all I got was a "trust me" type answer with no details at all. This was at the Amsat convention last year in Orlando. Specifically, I would like to know if our funds are covered by a bond, and who is the person actually responsible for holding the monies. I'm not a cheapskate, but I don't send my money around blindly, either. I appreciate that many have invested in and received their kits, but I still want some reassurances before I send my hard earned \$\$\$ away for an indeterminate period of time.

5. RF emissions! My DSP-12 really screams. I see that the DSP-93 is using multilayer boards. I know that if done right they can be nicely quiet, but I would like to know if someone who really understands emissions (including common) has checked this unit out on a spectrum analyser, and what the results were.

Since I have not decided (yet) if I will be making this purchase, I am not a member of the mailing list, so please e-mail me replies to:  
n7ryw@teleport.com

Thanks for your time.

>From Bill, n7ryw@teleport.com

## 122. Re: [DSP-93:1076] DSP-93?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 14 Jul 1995 20:13:36 -0500  
To: dsp-93@tapr.org  
Cc: n7ryw@teleport.com  
Message-ID: <v02120d00ac2cc440ab96@[204.181.160.16]>  
Rendered body type: text/plain

Bill,

>I am (again) contemplating the purchase of a DSP-93. The last time I looked  
>into this unit, I had a few concerns that were not yet addressed. I have  
>looked at the WWW page, and I still have some of them. Here they are...

>

>1. Is it really "Open"? Apparently, only some of the modems have source code  
>available, but I might have been reading the WWW page wrong. Most notably,  
>the 9600 full duplex and Windows Interface seemed to be proprietary. Is this  
>really true? If so, it is no better than the DSP-12 I already have, and  
>certainly not "Open".

The two items you mentioned are indeed the ones that the author has not made source code available. This is two items among many others that have full source code provided. ALL software is provided by volunteer users. I certainly do not think the lack of two items can cause the system not to be called "open". All interfaces are documented. A Programming Guide is available on the TAPR ftp site.

>2. It used to have the TNC part left out. This was a glaring omission. Is  
>the TNC now included, or is it still incomplete?

The DSP-93 has never had a "built-in" TNC. Some of the modems have implemented the TNC functions in software. There is a TAPR project (TNC-95) in development. That board would fit into the DSP-93 case.

>3. The modems had to be manually reloaded before, such as from 9600 full  
>duplex to 1200 bps afsk (terrestrial). Is the modem code now on-board and  
>internally loaded to the DSP on a mode-switching command?

The modem code was in EPROM on the first production release (Dec 1994). The modems in the EPROM were updated for the June 1995 release.

>4. The ordering procedure. I understand that Amsat and Tapr don't want to  
>fund the batch purchases needed to keep these units in stock. But, when I  
>asked about a couple of issues that would help to assure me that my  
>investment was safe, all I got was a "trust me" type answer with no details  
>at all. This was at the Amsat convention last year in Orlando.  
>Specifically, I would like to know if our funds are covered by a bond, and  
>who is the person actually responsible for holding the monies. I'm not a  
>cheapskate, but I don't send my money around blindly, either. I appreciate  
>that many have invested in and received their kits, but I still want some  
>reassurances before I send my hard earned \$\$\$ away for an indeterminate  
>period of time.

There are a few 10's of units available for immediate shipment. Act now. Operators are waiting for your call.

>5. RF emissions! My DSP-12 really screams. I see that the DSP-93 is using  
>multilayer boards. I know that if done right they can be nicely quiet, but I  
>would like to know if someone who really understands emissions (including  
>common) has checked this unit out on a spectrum analyser, and what the  
>results were.

My experience running the DSP-93 without its case on has caused no interference on the 144 and 430 MHz bands.

>Since I have not decided (yet) if I will be making this purchase, I am not a  
>member of the mailing list, so please e-mail me replies to:  
>n7ryw@teleport.com

Please feel free to join the list. It is "Open".

>Thanks for your time.

>

>>From Bill, n7ryw@teleport.com  
>Amsat NA Life Member #2109

Ron W5RKN

also:  
w5rkn@amsat.org

## 123. DSP-93 Build Update 14 July 1995

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 14 Jul 1995 20:23:48 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac2cc7d48292@[204.181.160.84]>  
Rendered body type: text/plain

DSP-93 Build Update  
June '95 Production

Updated: 14 July 1995

We will issue updates to the build process as the situation warrants. The latest update will be posted to the dsp-93 mailing list and will be available on ftp.tapr.org in the directory /tapr/dsp93/updates.

-----  
Be sure to visit the TAPR Web pages at <http://www.tapr.org/tapr/>  
-----

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94). These archives are also available on the TAPR Web pages.

----- HERE'S YOUR CHANCE TO HELP THE GROUP -----

As you interface your DSP-93 to your radio, etc., how about writing up your experiences, procedures, problems, etc. Post your results and we'll collect them.

What additional would you like to see in the Operations Manual? Let me know and I'll sign you up for a section or two.

-----  
July 14th, 1995 Update Section

Documentation Update  
-----

Ignore the item "Note to users of Icom Transceivers ..... 36" in the Table of Contents on page 1 of the Assembly Manual. This item is not relevant to this production build. The item was left over from a previous build.

SRAM chip type  
-----

The SRAM chips being sent out may be labeled HP93C9509 M628032-20PSI. These replace the SRAMs listed as 71256S20TP in the Assembly Manual.

RESET solder pads clarification  
-----

Solder one end of each wire in the two holes located next to (to the right of) the word RESET near the upper right corner of board one  
-----

June 30th, 1995 Update Section

Documentation Update  
-----

The June 1995 DSP-93 distribution ships with Version 2.17 of the EPROM. For Version 2.17 of the EPROMs, several documents on the distribution diskettes

have been updated and their content included in a new document "Programming Guide for the DSP-93". The documents MONITOR.DOC, MEM-93.DOC, and MONMEM.DOC are now obsolete. Also the comment in MONITOR.INC about the SIN/COS table is an anachronism and should be ignored for Monitor Version 2.17.

The new document "Programming Guide for the DSP-93" is available at [ftp.tapr.org](ftp://ftp.tapr.org) in the `tapr/dsp93/manuals` directory with the name `ProgGuide.word`. The file is in Microsoft Word format.

There are also several other documents currently in the same directory.

|                                          |                                  |
|------------------------------------------|----------------------------------|
| <code>DSP93_Interface_Win_Man.pdf</code> | The D93WE PSR article            |
| <code>DSP93_Assm_Man.pdf</code>          | The current Assembly Manual      |
| <code>DSP93_Ops_Manual.pdf</code>        | The new DSP-93 Operations Manual |

pdf documents are in the Adobe portable document format. Freeware reader installers for this document format are available at:

See <ftp://ftp.tapr.org/tapr/utis/ACROREAD.EXE> for Windows.  
See [ftp://ftp.tapr.org/tapr/utis/Acrobat\\_Reader\\_installer.hqx](ftp://ftp.tapr.org/tapr/utis/Acrobat_Reader_installer.hqx) for MacOS.

See <ftp://ftp.adobe.com/pub/adobe/Acrobat/Windows/acroread.exe> for PCs.  
See <ftp://ftp.adobe.com/pub/adobe/Acrobat/Macintosh/2.0.1/AcroRead.mac.sit> or <ftp://ftp.adobe.com/pub/adobe/Acrobat/Macintosh/2.0r3/AcroRead.sea.bin> for MacOS depending on which version you want.

#### Monitor Version 2.17 Programs in EPROM

The programs in Monitor Version 2.17 have been updated from Version 2.16. The new program list follows. Where the name of the mnemonic differs from the .OBJ filename, the filename follows the mnemonic.

|                     |               |
|---------------------|---------------|
| 1-SCOPE             | D93SCOPE.OBJ  |
| 2-SPECTRUMANALYZER  | D93SPEC.OBJ   |
| 3-FUNCTIONGENERATOR | D93FUNC.G.OBJ |
| 4-CW_93D            |               |
| 5-HFU_93X           |               |
| 6-HF_93A            |               |
| 7-HF_93AE           |               |
| 8-MEMTEST           |               |
| 9-PKTP1             |               |
| A-PKTP2             |               |
| B-PSKP1             | PSK93R1J.OBJ  |
| C-PSKP2             | PSK93R2J.OBJ  |
| D-PSK_93T2          |               |
| E-PSK_93P2          |               |
| F-APT_93B           |               |
| G-TESTANIN          |               |
| H-TESTBUZZ          |               |
| I-TESTLEDS          |               |
| J-TESTPORT          |               |
| K-TESTRAMP          |               |
| L-FSKISIP1          | FSK93K1.OBJ   |
| M-FSKISIP2          | FSK93K2.OBJ   |
| N-FSK15P1           | FSK93U1.OBJ   |
| O-FSK18P1           | FSK93U1B.OBJ  |
| P-FSK15P2           | FSK93U2.OBJ   |
| Q-FSK18P2           | FSK93U2B.OBJ  |
| R-HF_93HT           |               |
| S-HF_93HTE          |               |
| T-HF_MODEM          |               |

#### Power Supply Balancing

After both boards have been completed and assembled together, and the "DSP-93 Final Check" on page 25 of the Assembly Manual has been completed, perform a quick check of the balance of the two power supplies. Both +5V supplies on the two boards contribute to the +5V digital power planes. If the two regulators (VR100 and VR201) have significantly different regulating voltages, one of the regulators will carry more than its share of the load. The voltage across the two 0.22 ohm resistors (R107 and R210)



should be APPROXIMATELY equal (within a factor of two). Somewhere in the range of 50-90 mV is about right. Should the balance be way off (the voltage across one of them zero, say), please post a message on the dsp-93 mail list and we will work out a solution.

#### Testing DSP-93 RAM memory

-----

When performing "Test 3: Memory Test" on page 29 of the Assembly Manual, you should test both banks of RAM memory. Both RAM banks can be tested by issuing the 'T' command in slow mode (i.e., after a reset) and again in fast mode (i.e., after a 'G' command). RAM U104-U107 is tested in slow mode and RAM U108-U111 is tested in fast mode.

#### Error in Test 8 instructions

-----

When performing "Test 8: TESTANIN" on page 32 of the Assembly Manual using DOS, enter the command 'DSPLOAD TESTANIN' instead of 'DSPLOAD TESTANIN.OBJ'.

#### Error in Test 9 instructions

-----

When performing "Test 9: TESTPORT" on page 32 of the Assembly Manual using DOS, enter the command 'DSPLOAD TESTPORT' instead of 'DSPLOAD TESTPORT.OBJ'.

#### Correction to TNC Modem Disconnect Header Signal

-----

On page 35 of the Assembly Manual, the signal on pin 6 of TNC Modem Disconnect Header should be TRANSMITTER KEY INPUT rather than NO CONNECTION.

-----

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 124. Should I have gotten my unit by now

From: Bob Smith <rsmith@internetMCI.COM>  
Date: Sat, 15 Jul 1995 09:22:41 -0500  
To: "dsp-93@tapr.org" <dsp-93@tapr.org>  
Message-ID: <01HSW79880XE937NI9@MAILSRV1.PCY.MCI.NET>  
Rendered body type: text/plain

-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --

Been waiting with baited breath for my unit now for 3 months - Did they all ship and by what method? Mine has not arrived in Atlanta GA yet.

Thanks  
Bob, N3FTU

---

## 125. Questions on construction

From: rcox@holli.com (Ron Cox)  
Date: Sat, 15 Jul 1995 13:16:26 -0600  
To: dsp-93@tapr.org  
Message-ID: <ac2dc04a000210041e25@[198.70.38.244]>  
Rendered body type: text/plain

Under Miscellaneous on page 5 of the DSP-93 assembly manual, is the 2.5mm ID RS274-1573A coaxial power plug a part we should have? I seem to have one included with the parts, but it is not clear from the parts list that it is needed.

All the parts are here and the build is going well.

Ron Cox  
W9KFB  
rcox@holli.com

---

## 126. Re: [DSP-93:1080] Questions on construction

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 15 Jul 1995 14:14:20 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac2dc27464ff@[204.181.160.72]>  
Rendered body type: text/plain

>Under Miscellaneous on page 5 of the DSP-93 assembly manual, is the 2.5mm  
>ID RS274-1573A coaxial power plug a part we should have? I seem to have one  
>included with the parts, but it is not clear from the parts list that it is  
>needed.  
>  
>All the parts are here and the build is going well.  
>  
>  
>  
>Ron Cox  
>W9KFB  
>rcox@holli.com

Since the power transformers have different plugs (and sometimes unpredictably so) a power plug that fits P100 and P203 is included "just in case".

See page 13 of 36 "Transformer Plug Size." Hint: I searched the pdf file DSP93\_Assm\_Man.pdf for the word "plug".

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 127. Re: [DSP-93:1079] Should I have gotten my unit by now

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 15 Jul 1995 14:18:42 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac2dc4c5f08e@[204.181.160.71]>  
Rendered body type: text/plain

>-- [ From: Bob Smith \* EMC.Ver #b.2.5.02 ] --  
>  
>Been waiting with baited breadth for my unit now for 3 months - Did they  
>all ship and by what method? Mine has not arrived in Atlanta GA yet.  
>  
>Thanks  
>Bob, N3FTU  
  
>From Greg:

"Basically everything has been shipped except for maybe the last 40 or so. SRAM has all been shipped...as of Wed and Thursday.

Caps have been shipped to the people that didn't have those included...so we are progressing. The hold up was the Dorothy had oral surgery twice in the last two weeks...so you can imagine what that does."

Hope this helps!

Ron W5RKN

also:  
w5rkn@amsat.org

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## 128. Software?

From: Jeff Garret <jeff@kcbbs.gen.nz>  
Date: Sun, 16 Jul 1995 09:53:20 +1200 (NZST)

To: dsp-93@tapr.org  
Message-ID: <Pine.3.05.1.9507160923.A1207-9100000@kcbbs>  
Rendered body type: text/plain

Hi

I have been looking through the files available at ftp.tapr.org and found in software.list there is mention of object code for A0-13 400bps decode called P3C93T1/2. I have been unable to locate these files. Would you know where they are kept.

Many thanks  
Jeff  
jeff@kcbbs.gen.nz

---

### 129. Re: [DSP-93:1083] Software?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 15 Jul 1995 18:04:41 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac2df8d12a79@[204.96.0.143]>  
Rendered body type: text/plain

>Hi

>I have been looking through the files available at ftp.tapr.org and found  
>in software.list there is mention of object code for A0-13 400bps decode  
>called P3C93T1/2. I have been unable to locate these files. Would you know  
>where they are kept.

>

>Many thanks  
>Jeff  
>jeff@kcbbs.gen.nz

I think the files you are looking for are PSK\_93P2.OBJ and PSK\_93T2.OBJ.  
See the file PSK\_93T.DOC for more information. These files are in the OBJ  
and DOC directory of disk 2 of the software distribution diskettes.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 130. Re: [DSP-93:1083] Software?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 15 Jul 1995 19:10:57 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac2e0919fd9d@[204.96.0.108]>  
Rendered body type: text/plain

>Hi

>I have been looking through the files available at ftp.tapr.org and found  
>in software.list there is mention of object code for A0-13 400bps decode  
>called P3C93T1/2. I have been unable to locate these files. Would you know  
>where they are kept.

>

>Many thanks  
>Jeff  
>jeff@kcbbs.gen.nz

I found later versions of the A0-13 programs. I have put it on ftp.tapr.org  
in the /tapr/dsp93/upload directory. The file name is p3c93t.zip. This  
archive contains P3C93T.TXT, P3C93T1.OBJ, and P3C93T2.OBJ

Enjoy.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 131. help

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Sun, 16 Jul 95 07:03:20 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507161303.AA26202@rgfn.epcc.Edu>  
Rendered body type: text/plain

hi guys,

I now have my dsp93(June production)together, however am having a problem getting it past the test stage. It passes the Monitor test but locks up on the Speed Test...(when I enter 'g', the g is echoed on the terminal screen but the dsp93 has to be hard reset (main switch).Nothing changes with the LEDs.

BTW, Mmory Test seems to work in slow mode (comes back very quickly with the prompt) and again issuing a g for the fast test locks the unit. TestLeds does not work at all...And while looking at the monitor prompt all the commands work fine...I can list the eprom programs,do a 'r',etc.

Also, something odd, the final check says that just led218 and led211 should light on powerup and nothing else but on mine, led212 lights for just a second (or maybe blinks) on powerup also but only l218 and l211 stay on with l211 winking at me nicely for just a second :-).

Of course, I was up late last night looking at the boards for suspects and will continue today But am hoping someone can give me some hints to where to look since I really havnt got a clue at this point.

Am looking forward to having a heck of alot of fun with this new toy of mine!

Thanks

Charlie wa5kyv

ab870@rgfn.epcc.edu

---

## 132. Re: [DSP-93:1086] help

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 16 Jul 1995 08:53:17 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d03ac2ec80ddb60@[204.96.0.138]>  
Rendered body type: text/plain

Charlie, please do what is necessary to NOT double-space your messages :-)

>hi guys,  
>  
>I now have my dsp93(June production)together, however am having a problem  
>  
>getting it past the test stage. It passes the Monitor test but locks up  
>  
>on the Speed Test...(when I enter 'g', the g is echoed on the terminal screen  
>  
>but the dsp93 has to be hard reset (main switch).Nothing changes with the LEDs.

What do you mean by "the Monitor test"? Is this the 'T' command to test data memory? The 'G' command should turn off LED1 and turn on LED2. It also switches processor speed and switches memory banks. Check solder joints around U114 and U115.

>BTW, Mmory Test seems to work in slow mode (comes back very quickly with the >prompt) and again issuing a g for the fast test locks the unit. TestLeds does >not work at all...And while looking at the monitor prompt all the commands

>work fine...I can list the eprom programs,do a 'r',etc.

Again sounds like your unit will not go to "fast" mode. But you cannot run any of the programs in the 'P' command, right?

>Also, something odd, the final check says that just led218 and led211  
>should light on powerup and nothing else but on mine, led212 lights for  
>just a second (or maybe blinks) on powerup also but only l218 and l211  
>stay on with l211 winking at me nicely for just a second :-).

That is normal for some "strange" LED action on power-on. On pressing the Reset button, ONLY LED1 should wink.

>Of course, I was up late last night looking at the boards for suspects  
>and will continue today But am hoping someone can give me some hints  
>to where to look since I really havnt got a clue at this point.

Hang in there. Sounds like a bad solder joint to me.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 133. rep..help

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Sun, 16 Jul 95 09:14:25 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507161514.AA06272@rgfn.epcc.Edu>  
Rendered body type: text/plain

>What do you mean by "the Monitor test"? Is this the 'T' command to test  
>data memory? The 'G' command should turn off LED1 and turn on LED2. It also  
>switches processor speed and switches memory banks. Check solder joints  
>around U114 and U115.  
Meaning I can type '?' and get the menu as per Test 1 on page 28 of  
assembly manual. Will check U114 and U115 more.....

>Again sounds like your unit will not go to "fast" mode. But you cannot run  
>any of the programs in the 'P' command, right?  
Yep, cant run any programs in the 'P' command...

>That is normal for some "strange" LED action on power-on. On pressing the  
>Reset button, ONLY LED1 should wink.  
OK on "strange" and yes, only led1 does wink :-)

>Hang in there. Sounds like a bad solder joint to me.  
Will do  
>Ron W5RKN

Thanks Ron for the quick reply...please let me know of anything that I  
might look for.

Charlie wa5kyv  
ab870@rgfn.epcc.edu

---

### 134. Re: [DSP-93:1088] rep..help

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 16 Jul 1995 10:58:22 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac2ee68a04bf@[204.181.160.87]>  
Rendered body type: text/plain

>>What do you mean by "the Monitor test"? Is this the 'T' command to test  
>>data memory? The 'G' command should turn off LED1 and turn on LED2. It also  
>>switches processor speed and switches memory banks. Check solder joints  
>>around U114 and U115.  
> Meaning I can type '?' and get the menu as per Test 1 on page 28 of  
> assembly manual. Will check U114 and U115 more.....

Check SPEED SEL(U115-1) when you press 'G'.  
Also if you have a scope, does the clock (U115-8) change speed on 'G'.

Ron W5RKN

also:

### 135. rep...help

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Sun, 16 Jul 95 11:08:29 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507161708.AA19336@rgfn.epcc.Edu>  
Rendered body type: text/plain

Ron,  
U115-1 goes high to 3.88v on pres of 'g' but still locks up.  
After hard reset U115-1 is at 0v.  
I dont have scope (will try to borrow one) so I wont be  
hooking this up to a rig today but will fiddle with it on and  
off today.....rats :-(  
Thanks Ron,

Charlie wa5kyv  
ab870@rgfn.epcc.edu

---

### 136. Re: [DSP-93:1090] rep...help

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 16 Jul 1995 13:42:12 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac2f0c71ecbf@[204.96.0.99]>  
Rendered body type: text/plain

>Ron,  
>U115-1 goes high to 3.88v on pres of 'g' but still locks up.  
>After hard reset U115-1 is at 0v.  
>I dont have scope (will try to borrow one) so I wont be  
>hooking this up to a rig today but will fiddle with it on and  
>off today.....rats :-(  
>Thanks Ron,  
>  
>Charlie wa5kyv  
>ab870@rgfn.epcc.edu

Another line to check is XF (U112/U113-13). The XF line changes state  
between "slow" and "fast" mode. This signal is also on JP102/202-12 which  
is easier to probe when the boards are mated.

If that works, I'd keep looking for bad solder joints (chip pads for ground  
and +5 as most likely to be "cold" as they attach to the large thermal  
sinks - the power and ground plane layers), solder bridges, chips with  
bent-under pins, ....

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 137. Bob Morgan's unit

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 16 Jul 1995 14:00:03 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199507161900.0AA21372@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Bob Morgan, WB5AOH, just telephone me and let me know he got his unit  
finsihed and the SRAM arrived yesterday and he has it up and running.

Cheers - greg

---

### 138. rep...help

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Sun, 16 Jul 95 13:21:39 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507161921.AA07580@rgfn.epcc.Edu>  
Rendered body type: text/plain

Ron...more..  
I checked U115-8 with my freq counter and got 20mc, do a g and stays  
the same.  
Also per assembly man page 33, U114-5 has 20mhz, pin 9 has 10mhz and I  
get 40mhz coming out of the oscillator...I assume I should get 40mhz at  
U115-8 with the g command?

Am I missing something basic..I type 'g' nothing. I type 'g' <enter>  
nothing....all just locks...I do understand led1 should go out and  
led2 should light, of couse thats not happening.  
Well off to a Sunday lunch...  
Stil looking for ideas...  
Thanks  
Charlie wa5kyv  
ab870@rgfn.epcc.edu

---

### 139. Re: [DSP-93:1090] rep...help

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 16 Jul 1995 14:41:09 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac2f1b6a713b@[204.96.0.106]>  
Rendered body type: text/plain  
>Charlie wa5kyv  
>ab870@rgfn.epcc.edu

This may be checking the obvious, but are you sure you have the four RAM  
chips in the correct four of the eight RAM sockets?

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 140. Re: [DSP-93:1093] rep...help

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 16 Jul 1995 14:52:06 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac2f1db6fb3d@[204.181.160.70]>  
Rendered body type: text/plain  
>Ron...more..  
>I checked U115-8 with my freq counter and got 20mc, do a g and stays  
>the same.  
>Also per assembly man page 33, U114-5 has 20mhz, pin 9 has 10mhz and I  
>get 40mhz coming out of the oscillator...I assume I should get 40mhz at  
>U115-8 with the g command?  
>Am I missing something basic..I type 'g' nothing. I type 'g' <enter>  
>nothing....all just locks...I do understand led1 should go out and  
>led2 should light, of couse thats not happening.  
>Well off to a Sunday lunch...  
>Stil looking for ideas...  
>Thanks  
>Charlie wa5kyv  
>ab870@rgfn.epcc.edu

Looks like you are getting close. If SPEED SEL (U115-1) changes on 'G' (no  
return required) and U115-8 does not change, then the problem is in the  
U114/U115 "complex". At least that's a pretty narrow area to probe.

Keep looking.

Ron W5RKN

also:  
w5rkn@amsat.org

---

### 141. Proprietary Sorce Code

From: n7ryw@teleport.com (William Roth)  
Date: Sun, 16 Jul 1995 23:52:14 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507170651.XAA10387@desiree.teleport.com>  
Rendered body type: text/plain

I have seen that the source code for some of the modems (the most useful  
ones, really) and for the Windows Interface are not available. I read that  
this was to be an "Open" system, so why is the source not available? Seems  
rather at odds with the intent of the unit, and no better than the DSP-12,  
which is at least complete, but also without source for the important modems.

I just don't like having to rewrite the whole thing just to make some  
improvement!

Maybe the author(s) of these could answer this best. I am seriously contemplating purchasing one, but this is a serious sticking point.

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

## 142. Re: [DSP-93:1096] Proprietary Source Code

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 17 Jul 1995 02:30:52 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507170730.CAA14536@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to William Roth:

>  
> I have seen that the source code for some of the modems (the most useful  
> ones, really) and for the Windows Interface are not available. I read that  
> this was to be an "Open" system, so why is the source not available? Seems  
> rather at odds with the intent of the unit, and no better than the DSP-12,  
> which is at least complete, but also without source for the important modems.  
>

I guess we have two definitions of 'OPEN' going here.

Open to me denotes that the system provides all the necessary tools in order to do development. Thus, the DSP-93 is an open architecture because full information is available for development. This can be seen by the various DSP code developed by other outside the development group. The TAPR/AMSAT DSP-93 is the only amateur DSP that I know of that has as many developers writing code for it. None of the other commercial platforms have ever been truly 'open.'

Basic examples of the modems that have not been released are available (i.e. 9600 baud FSK is available, but not the souped up one). The reason for not allowing some of the modem sources to be fully available is in an attempt to protect OEM sales. If we made everything fully available, then there would be no reason for a commercial interest to OEM the device's software or hardware. So, you wouldn't have to start from square on any one modulation scheme.

This decision made by both AMSAT and TAPR as part of the joint process. TAPR and AMSAT see potential commercial sales of the unit (either as OEM hardware or code development) as the prime revenue generator of the project. While we make some profit from amateur sales, OEM sales is where both organizations look to recoup and eventually make a profit on the development. This profit then can be diverted back into projects like P3D or various TAPR projects.

Neither the Mac or Windows software are available in Source and I don't expect to see either made available soon. Ron Parsons holds the rights to the Mac version and thanks to Tom McDermott TAPR holds the rights to the Windows software. Tom and Ron have been updating the interface software and both allow for plug in modules and customization to some level. You'll need to check out the actual software to see what flexibility it allows you. Tom and Ron have been very good in updating the interface programs and I don't see a need to release the source. If you felt strongly about the addition of something in the interface programs I am sure we could talk with Tom and Ron about it and possibly bring you into the development group under an NDA. As an analogy, I don't think I ever saw Instant Track of WISP available as source.

I hope this answered your questions. I would hope that not having access to the sources for the interface software and only one or two of the modems will not turn you off from your purchase of the unit. The DSP-93 is accomplishing what it set out to do -- develop a platform for amateurs to develop DSP code.

> I just don't like having to rewrite the whole thing just to make some  
> improvement!  
> Maybe the author(s) of these could answer this best. I am seriously  
> contemplating purchasing one, but this is a serious sticking point.

If you feel your money is better spent on another platform -- please feel free not to purchase a DSP-93. I would rather have really happy people getting DSP-93s. This makes for a much better experience for the kit builder, developers, support people on dsp-93@tapr.org, and me.

Cheers - Greg, WD5IVD



---

### 143. rep...help

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Mon, 17 Jul 95 08:29:10 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507171429.AA04839@rgfn.epcc.Edu>  
Rendered body type: text/plain

Ron...

The XF line does change with 'g' also...when XF is hi Speed Sel is low. The XF line traces good on the board even to the DSP chip. I have been able to get 40mhz but I think I really need a osc to measure that. It still locks on "g" anyway. Interesting to note, I went thru the monitor doc on the disks and was able to dump memory (program or data). I also can fill some data memory and dumped it back to me...seems slow speed works. I then switched sram around since u108 and u109 run in fast mode.... no change. That Darn 'g' command.... Interesting detective work...as I follow the diagram looks like some lines from U112/U113 go directly to the sram....Ah but another Monday and \$\$ to make. Will piddle with it some in the eveings.. Thanks for the ideas...They have really helped to understand whats going on. Toss anymore that come to light back to me.  
Charlie wa5kyv  
ab870@rgfn.epcc.edu  
###

---

### 144. Re: [DSP-93:1098] rep...help

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 17 Jul 1995 15:04:52 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507171511.LAA07332@camel.campbell.edu>  
Rendered body type: text/plain

Charlie,

Just a note....I saw some bizzarre things when I had poor connections at the 7805 chip on the top/analog board. I had broken a leg and it was making intermittent contact causing things to lock up, etc.

Be sure to resolder those legs and inspect them. Wish I could offer more advice...

>  
>  
>Ron...  
>The XF line does change with 'g' also...when XF is hi Speed Sel  
>is low. The XF line traces good on the board even to the DSP chip.  
>I have been able to get 40mhz but I think I really  
>need a osc to measure that. It still locks on "g" anyway.  
>Interesting to note, I went thru the monitor doc on the disks and  
>was able to dump memory (program or data). I also can fill some data  
>memory and dumped it back to me...seems slow speed works.  
>I then switched sram around since u108 and u109 run in fast mode....  
>no change.  
>That Darn 'g' command....  
>Interesting detective work...as I follow the diagram looks like some  
>lines from U112/U113 go directly to the sram....Ah but another  
>Monday and \$\$ to make. Will piddle with it some in the eveings..  
>Thanks for the ideas...They have really helped to understand whats  
>going on. Toss anymore that come to light back to me.  
>Charlie wa5kyv  
>ab870@rgfn.epcc.edu  
> ###  
>  
>

Mark L. Hammond [KC4EBR]

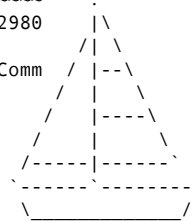
---

### 145. Voltage Regs.

From: paul@paccomm.com  
Date: Mon, 17 Jul 95 11:10:52 UTC  
To: dsp-93@tapr.org  
Message-ID: <906@paccomm.com>  
Rendered body type: text/plain

I used to hear many accounts of blown TNCs a few years back. Early PacComms had this trouble until the reg. was moved on board. Kantronics units were notorious. What would happen is the reg. was soldered to the front edge of the board and mounted to the case by a self-tapper. When taken apart, sometimes the centre leg would fracture at the case of the device (yep, it ALWAYS seemed to be the centre [ground] leg). The effect was, of course, a killed TNC because full input volts would be placed on all devices instead of the +5V required! Seeing the thread about the DSP-93 reg. reminded me of this. There was/is a simple cure..... I ALWAYS solder a small piece of hook-up wire from a nearby ground point to the tab of the reg. If you tin the side edge of the reg's heatsink tab with a small blob of solder and solder the wire on there, you'll never have this problem..... a few seconds work saves a complete TNC. I've seen this happen on other types of units - it's always worth taking a few seconds to make sure the fracturing of the ground leg won't result in disaster!

~~~~~  
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980  
Fax: +1 (813) 872-8696  
Views expressed here are not necessarily those of PacComm  
Don't surf the net, SAIL it!  
Captain of S/V "Spindrift", Dunedin, FL.  
Tall rig (58'), Winged Keel (4' 2"), full batten main  
PacComm Packet Radio Systems  
4413 N. Hesperides St., Tampa, FL 33614-7618  
~~~~~



## 146. Re: [DSP-93:1098] rep...help

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 17 Jul 1995 11:00:04 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac302f463f7b@[204.96.0.129]>  
Rendered body type: text/plain

>Ron...  
>The XF line does change with 'g' also...when XF is hi Speed Sel  
>is low. The XF line traces good on the board even to the DSP chip.

It originates at the DSP chip. This signal is the controlling line for fast/slow mode.

>I have been able to get 40mhz but I think I really  
>need a osc to measure that. It still locks on "g" anyway.  
>Interesting to note, I went thru the monitor doc on the disks and  
>was able to dump memory (program or data). I also can fill some data  
>memory and dumped it back to me...seems slow speed works.  
>I then switched sram around since u108 and u109 run in fast mode....  
>no change.  
>That Darn 'g' command....

I think you are looking in the right area. First I would see why the clock signal (U115-8) does not switch from 20 MHz (slow) to 40 MHz (fast) on 'G'. This should be rather simple as you said the 40/20/10 MHz sigs were present on U114. Trace through the gates on U115 which select a 20/40 clock depending on SPEED SEL (which you said is OK).

Then I'd trace out the OE, WE and CE lines from U112/U113 to the SRAM. These lines help control the bank switching from slow to fast.

>Interesting detective work...as I follow the diagram looks like some  
>lines from U112/U113 go directly to the sram....Ah but another  
>Monday and \$\$ to make. Will piddle with it some in the eveings..  
>Thanks for the ideas...They have really helped to understand whats  
>going on. Toss anymore that come to light back to me.  
>Charlie wa5kyv  
>ab870@rgfn.epcc.edu

Sorry you had to get back to \$\$\$ and leave your real work at home.

Ron W5RKN

also:

---

## 147. DSP-93 Progress

From: robertsm@JSC.MIL  
Date: Mon, 17 Jul 1995 12:35:18 -0400  
To: dsp-93@tapr.org  
Message-ID: <95Jul17.123440edt.29441@annap2.jsc.mil>  
Rendered body type: text/plain

Have my DSP-93 working with the test programs, but have not interfaced to the radios yet.

Using PROCOMM Plus, the "ENTER" key does nothing, rather the "ESCAPE" key seems to cause the requested function to operate. Am I doing something wrong with PROCOMM?

What is the status of the add-on board to make the DSP-93 a stand alone system?

Thanks for a good job. 73  
Mel W3MR robertsm@jsc.mil

---

## 148. handshaking/DSP-93 Progress

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 17 Jul 1995 13:35:01 -0400  
To: dsp-93@tapr.org  
Message-ID: <199507171735.NAA07867@camel.campbell.edu>  
Rendered body type: text/plain

Hi Mel,

My guess is that you have Procomm setup for handshaking of some sort, either hardware or XON/XOFF.

\*\*\*Make sure you have the terminal program you are using set up for NO handshaking whatsoever\*\*\*

Do you have windows? Have you tried the D93WE terminal interface?

> Have my DSP-93 working with the test programs, but have not  
>interfaced to the radios yet.  
> Using PROCOMM Plus, the "ENTER" key does nothing, rather the  
>"ESCAPE" key seems to cause the requested function to operate.  
>Am I doing something wrong with PROCOMM?  
> What is the status of the add-on board to make the DSP-93 a stand  
>alone system?  
> Thanks for a good job. 73  
> Mel W3MR robertsm@jsc.mil

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
Campbell University

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## 149. Re: [DSP-93:1102] DSP-93 Progress

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 17 Jul 1995 13:30:59 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac305c2ccc60@[204.181.160.93]>  
Rendered body type: text/plain

> Have my DSP-93 working with the test programs, but have not  
>interfaced to the radios yet.  
> Using PROCOMM Plus, the "ENTER" key does nothing, rather the  
>"ESCAPE" key seems to cause the requested function to operate.  
>Am I doing something wrong with PROCOMM?

I would try to get it working using D93WE or Windows Terminal first (19200,N,8,1 no hdwe or soft handshaking) or a simple DOS terminal program. Programs like Procomm are sometimes set up to do special things that the DSP-93 does not need.

Just press single characters (either case, no return needed) to make the Monitor functions work.

> What is the status of the add-on board to make the DSP-93 a stand  
>alone system?

Wish I knew!!!!!!

> Thanks for a good job. 73  
> Mel W3MR robertsm@jsc.mil

Ron W5RKN

also:  
w5rkn@amsat.org

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## 150. Yaesu Beta test report #10

From: w6shp@amsat.org (Howard Sodja)  
Date: Mon, 17 Jul 1995 16:14:20 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507172314.QAA10050@hopf.dnai.com>  
Rendered body type: text/plain

Hello Frank,

Good news! Your psk93x1b is ready for prime time use by Yaesu owners. It just passed the hardest test I could give it, a head to head comparison with my excellent TAPR PSK hardware modem, using my Lindenblads (i.e., weak signals with QSB). All the test passes were over 25 degrees, as lower passes are poor with throughput very dependent on maximum elevation with omni antennas. I got 6 passes with the hardware modem and 4 with the DSP-93 using your program. The pb.log throughput figures were so close on every pass I did not feel the need for any more passes. Mean BPS for the TAPR hardware modem was 50, average KB per pass 31, and the DSP-93 with psk93x1b.obj was 54 BPS mean and 36 KB average per pass. The maximum BPS was usually 153 BPS, with one pass of 155 for both modems and one hardware modem pass hitting 159 BPS max.

A0-16 was empty most of the time so I downloaded activity and error logs to keep the bird downloading all the time. These figures are twice as good as I got from psk93x1a, I believe primarily because of the better doppler tracking of x1b and it's ease of tuning. But you may have done something else I do not know about for x1b.

I found that psk93x1b never gave false noise induced mic clicks except for one time this last weekend when my neighbor ran his lawn mower which gave me 2 v p-p ignition noise spikes. You can tune on the false psk peak, but the sound is different enough new users will quickly get the hang of it, just like us TAPR hardware modem users did. Doppler tracking is only lost during those deep QSBs when the bird is high and mic clicks rapid. You may recall I tried setting the FSK RXD from the recommended 1 v p-p to 1.5 v p-p with psk93yz1 and found the doppler tracking greatly improved, but throughput down with sever flat topping (seen at TP 1). As you feel 1.2 v p-p for the fsk signals should be no problem, I will try that next to see if that will be enough to keep psk93x1b locked, but without the sever clipping that messed up data recovery for the DSP-93 with the flat topped waves.

Even when mic click is lost, recovery is much easier than with the previous versions. And this is only a weak signal problem, as I never have lost lock when using my beams. I'm still waiting for that 90 pass to try. And I should emphasis that this loose of mic click happens even with the hardware modem when the bird is near the apex as the Lindenblads have a null zone overhead. It is just that the hardware modem keeps lock for a bit weaker signal. This is hard for me to quantify as my S-meter is on the zero peg when lock is lost with both modems. And lock is lost only once or twice on passes high enough to experience those deep apex QSB nulls (over 45 degrees). Thus, my hope the 1.2 v. p-p increase at TP-1 will make the mic click lock as sensitive as the TAPR hardware modem. It is close now. I'll have a report on this in a few days.

Thanks for your patience as I tried to find fault with the various versions you sent me. If the 1.2 v p-p bring the mic click lock signal sensitivity level up to par with the hardware modem, with the throughput figures staying above the hardware modem's pb.log stats, us Yaesu owners will have a psk program that exceeds what our old hardware modems can do. And, for the benefit of the newcomers to the DSP-93 group, let me repeat that your fskp1.obj has a higher pb.log throughput than my G3RUH hardware modem. Good work, Frank!

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and A0-16  
w6shp@amsat.org

---

## 151. Re: [DSP-93:1105] Yaesu Beta test report #10

From: fperkins@onramp.net  
Date: Mon, 17 Jul 1995 19:15:01 -0500  
To: dsp-93@tapr.org

Message-ID: <199507180015.TAA02328@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Howard,

Thank you very much for your test reports. Despite the great popularity of the YAESU 736 in satellite work, no one in the code development & beta group had the DSP-93/YAESU combo going.

I was able to borrow Lon's unit long enough to ring out the basic tuning, but not to do the extensive testing you have done.

We will package up the YAESU series for release in the next few weeks. Meanwhile, you were one of the "1st on the block" to run the YAESU code.

73 Frank WB5IPM

---

## 152. Re: [DSP-93:1085] Re: Software?

From: jeff@kcbbs.gen.nz (Jeff Garrett)  
Date: Tue, 18 Jul 1995 13:55:25 +1200  
To: dsp-93@tapr.org  
Message-ID: <199507180144.NAA08896@kcbbs.gen.nz>  
Rendered body type: text/plain

>>Hi  
>>I have been looking through the files available at ftp.tapr.org and found  
>>in software.list there is mention of object code for A0-13 400bps decode  
>>called P3C93T1/2. I have been unable to locate these files. Would you know  
>>where they are kept.  
>>  
>>Many thanks  
>>Jeff  
>>jeff@kcbbs.gen.nz  
>  
>  
>I found later versions of the A0-13 programs. I have put it on ftp.tapr.org  
>in the /tapr/dsp93/upload directory. The file name is p3c93t.zip. This  
>archive contains P3C93T.TXT, P3C93T1.OBJ, and P3C93T2.OBJ  
>  
>Enjoy.  
>  
>  
>Ron W5RKN

Hi Ron  
Many thanks. I have downloaded the file and now have to wait for a suitable  
pass to check it out.

Cheers  
Jeff

Jeff Garrett  
ZL1BIV                      jeff@kcbbs.gen.nz              zl1biv@zl1ab.#11.nz.oc

---

## 153. request

From: matem@ipv36.unipv.it (dip. Matematica- Rossella)  
Date: Tue, 18 Jul 1995 08:09:18 +0200  
To: dsp-93@tapr.org  
Message-ID: <9507180609.AA01717@unipv.it>  
Rendered body type: text/plain

i am looking for w9gr\_93 filter.Is not on diskettes.any      suggestion  
in3dyg      frank

---

## 154. Re: [DSP-93:1108] request

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 18 Jul 1995 06:48:28 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac314f38e6d1@[204.96.0.140]>  
Rendered body type: text/plain

>i am looking for w9gr\_93 filter.Is not on diskettes.any      suggestion  
>in3dyg      frank

There are some problems in the code with some DSP-93 units and it has not  
been released. I have been trying to contact the author.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 155. No high speed mode

From: dave holmes <k4umi@tsquare.com>  
Date: Tue, 18 Jul 1995 13:01:13 -0400 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.LNX.3.91.950718125247.145A-100000@tsquare.com>  
Rendered body type: text/plain

I just completed my DSP box and began testing. I have the identical problem as Charlie WA5KYV detailed here. My scope is on loan and won't be back for a few days so I have not been able to get far in trouble shooting. I have all the same symptoms as Charlie ie can't run any programs from the P command, no led 212 light, no downloaded programs will run but the T command and fill and dump etc are ok. I think the oscillator must be quitting instead of switching as the background noise from the dsp box goes completely away when you try the g command. Only a power cycle will reset it the reset button has no effect once you try to switch. I'll post my findings as I get further into the problems.

---

## 156. Re: [DSP-93:1110] No high speed mode

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 18 Jul 1995 13:54:15 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac31b33f6715@[204.96.0.107]>  
Rendered body type: text/plain

>I just completed my DSP box and began testing. I have the identical  
>problem as Charlie WA5KYV detailed here. My scope is on loan and won't be  
>back for a few days so I have not been able to get far in trouble shooting.  
>I have all the same symptoms as Charlie ie can't run any programs from  
>the P command, no led 212 light, no downloaded programs will run but the  
>T command and fill and dump etc are ok. I think the oscillator must be  
>quitting instead of switching as the background noise from the dsp box  
>goes completely away when you try the g command. Only a power cycle will  
>reset it the reset button has no effect once you try to switch. I'll post  
>my findings as I get further into the problems.

Is the chip provided for U115 a 74S03? Not a 7403, 74LS03, etc.?

In the beta build, this part was changed to 74S03 as the other parts are not fast enough to support a 40 MHz clock.

Ron W5RKN

also:  
w5rkn@amsat.org

---

## 157. No high speed mode

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Tue, 18 Jul 95 18:53:59 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507190053.AA17519@rgfn.epcc.Edu>  
Rendered body type: text/plain

Ron,  
The chip provided with my kit is a SN74ALS03BN.....  
I hope it is just the chip.....  
Yep Dave...you have got the exact problem...  
charlie wa5kyv  
ab870@rgfn.epcc.edu

---

## 158. Observations

From: jeff@kcbbs.gen.nz (Jeff Garrett)  
Date: Thu, 20 Jul 1995 07:18:21 +1200  
To: dsp-93@tapr.org  
Message-ID: <199507191907.HAA11011@kcbbs.gen.nz>  
Rendered body type: text/plain

Hi  
Reading through some of the problems that builders of this batch of DSP-93's are having I thought it may be worthwhile mentioning a quick check I did during my build which saved a lot of headaches. Once all the IC sockets are

installed on the boards, check the grip of the socket by inserting a pin into connector and feel if it is holding firmly. I found one that didnt!!! It turned out that the socket had been formed incorrectly and I replaced the socket.

Another observation that has occurred over a period of time since I built my unit is the further occurrence of the HEATSTROKE problem. Oh no you think. This time I have really got on to it but cant fix it. I live in a country area and being the middle of winter there is a higher than normal drain on the mains, also there is a fault with the supply voltage to my house. As a result of all this my mains input is down 20% at times, The DSP-93 is continually resetting itself. I could up the input voltage to the DSP but will wait until my local power company fixes the line problem.

I hope this lot may help someone.  
Cheers

Jeff Garrett  
ZL1BIV

jeff@kcbbs.gen.nz

zl1biv@zl1lab.#11.nz.oc

---

## 159. MFJ-1270C Connections

From: ROBERTSM@JSC.MIL  
Date: Wed, 19 Jul 1995 17:55:25 -0400  
To: dsp-93@tapr.org  
Message-ID: <95Jul19.180327edt.29441@annap2.jsc.mil>  
Rendered body type: text/plain

A while ago, Mark Hammond wrote a note explaining how to connect the DSP-93 to a MFJ-1270C. Does anyone know what pins have to be connected and what points are used to take off the data?

Thanks, Mel W3MR robertsm@jsc.mil

---

## 160. Re: [DSP-93:1114] MFJ-1270C Connections

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 19 Jul 1995 17:35:07 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac3336c8762b@[204.96.0.107]>  
Rendered body type: text/plain

>A while ago, Mark Hammond wrote a note explaining how to connect the  
>DSP-93 to a MFJ-1270C. Does anyone know what pins have to be  
>connected and what points are used to take off the data?  
> Thanks, Mel W3MR robertsm@jsc.mil

This may be what you were looking for. [DSP-93:401].

Ron

=====

Paul,

I am using the MFJ-1270C. It is cheap (~\$115 new) and works like a charm. The DSP-93 "plugs right in" (you have to make your own cable) thru a disconnect header on the MFJ. It is a "true" TNC-2 clone and goes in/out of kiss mode just fine.

I \*did\* make a few mods that make the use of the 1270C very easy/convenient.

1) I put a switch (DPDT) on the front panel that does two things:

1a) switch between 9600 and 1200 baud (I hate those little dip switches on the back!)

1b) lights the TURBO LED on the front when in 9600 position, shuts it off for 1200 baud. You can \*\*SEE\*\* what baud your TNC is set to from across the room!

2) I used the straight connector on the back (the one that is supposed to be used for TTL levels I think) and cut all traces (except ground) to the pins; ran a cable (5 wire) from the modem disconnect header inside of the MFJ-1270C to these pins - they are mostly "pre-silk screened", too :) Then I used the supplied external plastic connector that fits this pin set, and made a cable that terminates to a DB25 connector that plugs into the back of the DSP93.

That gives me one cable that stays inside of the MFJ-1270C and runs to a

pin jack on the back of the TNC, and another cable that runs from the TNC to the DSP-93.

These little things are things I found handy after months of playing with the unit during beta-testing. You might consider these issues when you are making a selection.

The BEST solution will be the TNC-95 !!! :) :) :) Until then, the MFJ-1270 is fine. I did NOT have to cut any of the traces at the TNC disconnect header. I chose to use the jack on the back and cut its traces for "ease of use". I hope this helps!

>Hi, gang.  
> Thanks to all the wonderful dialogs (debates?) on the list, I've  
>managed to avoid at least a few of the pitfalls. I really appreciate the  
>way everyone has been communicating!  
> With my DSP-93 up and running (at least passing all tests), I'm now  
>ready to begin interfacing it to something. It is my desire to purchase a  
>dedicated TNC for this project.  
> QUESTION: for maximum flexibility along with minimum interface  
>hassles, which of the various commercially available TNC's would you  
>folks recommend I purchase for a dedicated DSP-93 setup? Any and all  
>recommendations would be appreciated. Obviously, I want to keep  
>things simple, affordable, powerful and upgradable (I don't ask for much,  
>do I?)  
> Vy 73 to all, Paul n6tx

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
hammond@camel.campbell.edu

Campbell University  
Department of Biology  
Buies Creek, NC 27506  
1-919-893-1734 or  
1-800-334-4111, ext. 1734

Ron W5RKN

also:  
rparsons@bga.com

---

## 161. What chip is U115?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 19 Jul 1995 16:12:35 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac3324c0397d@[204.96.0.75]>  
Rendered body type: text/plain

Yesterday I sent the following inquiry. I understand the listserver machine had some problems so responses may have been lost. If you responded (or even if you didn't) please respond again.

Ron W5RKN

>I just completed my DSP box and began testing. I have the identical  
>problem as Charlie WA5KYV detailed here. My scope is on loan and won't be  
>back for a few days so I have not been able to get far in trouble shooting.  
>I have all the same symptoms as Charlie ie can't run any programs from  
>the P command, no led 212 light, no downloaded programs will run but the  
>T command and fill and dump etc are ok. I think the oscillator must be  
>quitting instead of switching as the background noise from the dsp box  
>goes completely away when you try the g command. Only a power cycle will  
>reset it the reset button has no effect once you try to switch. I'll post  
>my findings as I get further into the problems.

Is the chip provided for U115 a 74S03? Not a 7403, 74LS03, etc.?

In the beta build, this part was changed to 74S03 as the other parts are not fast enough to support a 40 MHz clock.

Ron W5RKN

also:  
rparsons@bga.com



---

## 162. Re: [DSP-93:1114] MFJ-1270C Connections

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 20 Jul 1995 00:12:35 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507200020.UAA01923@camel.campbell.edu>  
Rendered body type: text/plain

Mel,

I can't find it here at home. Unless somebody beats me to the file, I will look at my work machine tomorrow afternoon.

I basically ran a cable from the TNC disconnect header to the TTL connector on the back of the MFJ-1270C. I cut the traces (except ground) and used the pins on the TTL connector. Then I made a cable from the TTL connector to the DB-25 connector on the DSP-93.

If all else fails, I'll crack open the MFJ and read off the pins. They are as indicated in the construction manual for the TNC disconnect header.

>A while ago, Mark Hammond wrote a note explaining how to connect the  
>DSP-93 to a MFJ-1270C. Does anyone know what pins have to be  
>connected and what points are used to take off the data?  
> Thanks, Mel W3MR robertsm@jsc.mil  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 163. No high speed

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Wed, 19 Jul 95 18:22:55 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507200022.AA00545@rgfn.epcc.Edu>  
Rendered body type: text/plain

I have a 74ALS03 for U115. I understand from a previous message that I should have a 74S03. Maybe that's the problem. Anyway, I cant find one in El Paso.....  
Can someone stick one in the mail for me?  
Charlie wa5kyv  
ab870@rgfn.epcc.edu

---

## 164. high speed problem

From: dave holmes <k4umi@tsquare.com>  
Date: Tue, 18 Jul 1995 20:09:14 -0400 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.LNX.3.91.950718200733.3153A-100000@tsquare.com>  
Rendered body type: text/plain

With regard to the high speed switching problem, here are my measurements with

a high speed logic probe as my scope has not returned yet.

|     | u115     |           | u114     |           |
|-----|----------|-----------|----------|-----------|
| pin | lovspeed | highspeed | lovspeed | highspeed |
| 1   | 0        | 1         | 0p       | 0p        |
| 2   | 0p       | 1         | 1        | 1         |
| 3   | 1        | 0         | 1        | 1         |
| 4   | 1        | 0         | 1        | 1         |
| 5   | 1        | 0         | 0p       | 0         |
| 6   | 0        | 1         | 0p       | 1         |
| 7   | gnd      |           | 0p       | 1         |
| 8   | 0p       | 0         | gnd      |           |
| 9   | 0p       | 0p        | 0p       | 0         |
| 10  | 0        | 1         | 1        | 1         |
| 11  | 0p       | 0         | 1        | 1         |
| 12  | 1        | 0         | 1        | 1         |
| 13  | 0p       | 0         | 0p       | 0         |
| 14  | vcc      |           | 1        | 0         |
| 15  |          |           | 1        | 0         |

where 0p is low pulsing high

As you can see the clock on pins 8,11 of u115 goes away in high speed. pin 9 still has the clock and pin 10 switches as it should.  
I checked the socket to be sure pin 8,9 and 10 of the chip was connected thru to the backplane and they were. I conclude that I must have a chip that has a bad gate or won't clock at 40 mhz. I have no spare chip to try.

I also noted that the 10mhz clock from u114 also goes away in high speed since the chip is held in reset by a low on u115 pin 3. This may be a design feature??

The chip supplied is a 74als03b TI.  
Anyone have any better ideas???  
Thanks Dave K4UMI

---

## 165. Re: [DSP-93:1119] high speed problem

From: bstrick@dallas.net (Bob Stricklin)  
Date: Wed, 19 Jul 1995 22:05:30 -0500  
To: dsp-93@tapr.org  
Message-ID: <9507200305.AA12995@dns>  
Rendered body type: text/plain

>  
>The chip supplied is a 74als03b TI.

This is your problem. You must have the 74S03 to get the required speed. If you can not find one locally then TAPR will need to mail you a chip.

>Anyone have any better ideas???  
>Thanks Dave K4UMI  
>  
>

Bob Stricklin, N5BRG

---

## 166. U115 should be 74S03

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 19 Jul 1995 22:10:11 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac3378a6efef@[204.251.33.8]>  
Rendered body type: text/plain

I think we may have guessed right that a few ALS parts got into the distributors 74S03 bins.

The ALS part is T00 slow. Try to obtain a 74S03 locally (they are real cheap - probably cost more to mail one than to buy one). But if you have something other than a 74S03 for U115 and cannot obtain one locally, contact Dorothy in the TAPR office. I talked with Greg tonight and he will apprise her of the problem and TAPR will try to get the replacement 74S03.

Onward!

Ron W5RKN

also:  
rparsons@bga.com

---

## 167. modem.obj crashing?

From: w6shp@amsat.org (Howard Sodja)  
Date: Wed, 19 Jul 1995 21:33:11 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507200432.VAA14471@hopf.dnai.com>  
Rendered body type: text/plain

Hello Dave,

I seem to be having problems with your latest modem.obj in port 2. Initially all seems to work well, although it seems to be a bit harder to tune RTTY than your last version. But this version sure can pull weak signals out of the mud. I'm impressed with that part. Tonight I was copying a signal I could hardly hear while 2 stations, each 589, were on top QRMing the SITOR station. It printed like it was the only station on.

But then sometimes printing suddenly stops and LED 4 stops flashing. If I press "R <cr>" printing resumes if I am in RTTY mode. But I thought this is suppose to reset to the default. Yet it resumes 170 shift/45.5 baud, sometimes. Then sometimes it does not. Sometimes all the lights go off, then back on, and then off, except LED 1 which keeps on flickering faintly. Once it starts doing this, I never get LED 4 to flash, and no print to the screen. But if I do a hardware reset and reload your program, then it will print along quite well for a while. This is in RTTY.

AMTOR and SITOR seem to be ok, unless the RTTY stops. Then nothing seems to work reliably. Sometimes AMTOR will still print. So it seems as though the program is crashing, as reloading always gets thing working again.

I tried port 1 for 20 minutes and had no problems. But I was just copying the W1AW bulletin, and not giving commands. It seems to crash sooner if I am messing around with the commands. Also the P, R and D commands need a <cr> to be active on my DSP. Didn't you say that was not needed? I also noticed that often b4m8p2 will not copy RTTY, but m8<cr>b4<cr>p2<cr> will. Does M reset other parameters besides the port? As my Microsat programs are all port 1, I had to change back for a pass.

Part of my frustration when these thing happen is that there is no way to tell how your program is actually running. In your last message you said you did not plan to write code for a command confirmation routine. Could you at least write some code so we can query the status if the various settings? Perhaps only one parameter is being reset and messing things up. But there is no way to tell that I am aware of.

Finally, you said to tap the scope off of JP212. I still get a sine wave off either pin. I have been using the speaker output to get the various D command waveforms, but obviously ac coupled. I examined the schematic and could not determine any other jumper that has the AIO dc signal, unless it is the output (pin 21) of U208, which can be easily tapped off of R234. Is this correct? Or am I missing something?

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 168. hf modem

From: ljs@west.net (L.J.Shepherd)  
Date: Wed, 19 Jul 1995 22:41:59 -0700  
To: mills@huey.udel.edu  
Cc: dsp-93@tapr.org  
Message-ID: <199507200542.WAA03603@acme.sb.west.net>  
Rendered body type: text/plain

Hello Dave:

I've waited a bit to respond to your last message in order to get a bit more experience with your hf modem (Rev 7/5/95). At this point I'm pleased to report that I've had successful 2-way contacts on both RTTY and SITOR (amtor).

As we had discussed, the SITOR/AMTOR mode is clearly the better performer in a noisy environment.....I had earlier confirmed your findings with respect to the modem's ability to produce excellent copy in very difficult situations with complex interference scenarios, and the modem continues to amaze me in the 2-way contacts.

I tried the synchronous RTTY mode with the W1AW bulletins and believe it does produce a noticeable improvement, as you had suggested. There does not seem to be much difference in the slower-paced reception of a hand-typed message.

I have noticed several things in the operation of the program that you may find of interest:

1. At irregular intervals in SITOR reception, the output will stop.....it's as if someone entered a control-S command (although control-Q does not produce resumption of data output).....simply entering a CR (enter or return command from the keyboard) resumes data output, but the text from the halt to the CR is lost. This seems to happen randomly every 5-10 minutes of operation.

The TAPR design team has suggested that either hardware or software handshaking should not be used in the DSP-93 to computer interface and I wonder if you've designed some hardware-based data flow control such that buffer overflow, etc. might be halting the output. I'm using a 19.2K data port rate, so buffer overflow seems unlikely.

2. I have the sense that attempting to revert to RTTY mode after having selected SITOR results in difficulty in reinitializing the modem to the desired RTTY parameters. As you suggest, there does seem to be some interaction between the use of the "M" command and several of the other parameters. The tuning of this modem seems subjectively more critical on RTTY than the previous version. At cold start, the modem tuning seems less

critical on RTTY than after reinitializing after a SITOR session. SITOR seems easier to tune, but this may be related to the design's superior performance in that mode. I find the matched filter configurations to produce superior results in my first tests.

3. I've been using the full-duplex mode in the 2-way contacts, principally for it's ability to produce accurately echoed transmit characters on the monitor crt, without the extraneous upper-case characters evident in the half duplex modes.

4. The utilization of a split transmit-receive screen in the interface comm program (not the modem code) would help to clarify the correct entry of commands during operation. The normal echo of commands during reception is difficult to visualize in the received text.....I found myself hunting for my commands within the confusion of the received text. It might be helpful to have a configuration command that would type out the various parameter settings. It could also be useful to have some simple ack character to indicate the successful reception and change of a command parameter.

-----

Your suggestion regarding a hybrid FEC/ARQ scheme is very interesting. I have no practical experience with SITOR ARQ, but understand it to have accurate but very slow data recovery in marginal conditions. The excellent performance of this modem in FEC mode suggests that taking the time to examine a line of text for erasures might not be time significant in terms of the performance of present day analog ARQ modems in marginal conditions. >From my brief experience, I agree that erasures are far more common than outright errors.

I assume that to achieve something like this would require some assignment of character position designation within a line, such that you could keep track of the location of the erasures. I wonder if there would be any time economy in requesting a repeat immediately after the reception of an erasure.....perhaps that would break the protocol, although the idea of average buffered text shorter than a whole text line seems initially attractive. Thinking out loud, this could be false economy in the case of multiple erasures within a single line.

Once locked, the sync of each receiver would seem partially dependant on the ability of the rx mode of a given modem to remain in sync during and after a tx interval. I don't know how you handle the clock situation, but I suspect that a common clock for tx and rx is used.....do these things exhibit any significant drift ?

With respect to ARQ Mode A, I would enjoy this capability for the learning experience, but really became interested in SITOR because of the FEC mode. Also, and as you suggest, it would be interesting to try higher speeds experimentally.

Thanks again for all your effort !

Jim, K60YY

---

## 169. Kit shipment update?

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Thu, 20 Jul 95 08:00:18 BST  
To: dsp-93@tapr.org  
Message-ID: <9507200700.AA03132@getafix.oasis.icl.co.uk>  
Rendered body type: text/plain

Can anyone update me on the status of the kit shipment? Have all the ordered kits gone out yet? I have not received mine and will be away for 3 weeks from 22nd July, so will not be able to receive any packages. When should I start worrying about the shipment going astray?  
Thanks, John Melton g0orx/n6lyt

---

## 170. Re: [DSP-93:1116] What chip is U115?

From: gobier02@sarenet.es (Jabi Aguirre)  
Date: Fri, 20 Jul 1990 09:04:45 +0200  
To: dsp-93@tapr.org  
Message-ID: <9507200701.AA13867@sarenet.es >  
Rendered body type: text/plain

>Yesterday I sent the following inquiry. I understand the listserver machine  
>had some problems so responses may have been lost. If you responded (or  
>even if you didn't) please respond again.  
>

```

>Ron W5RKN
>
>
>>I just completed my DSP box and began testing. I have the identical
>>problem as Charlie W5KYV detailed here. My scope is on loan and won't be
>>back for a few days so I have not been able to get far in trouble shooting.
>>I have all the same symptoms as Charlie ie can't run any programs from
>>the P command, no led 212 light, no downloaded programs will run but the
>>T command and fill and dump etc are ok. I think the oscillator must be
>>quitting instead of switching as the background noise from the dsp box
>>goes completely away when you try the g command. Only a power cycle will
>>reset it the reset button has no effect once you try to switch. I'll post
>>my findings as I get further into the problems.
>
>
>Is the chip provided for U115 a 74S03? Not a 7403, 74LS03, etc.?
>
>In the beta build, this part was changed to 74S03 as the other parts are
>not fast enough to support a 40 MHz clock.
>
>
>Ron W5RKN
>
>also:
>rparsons@bga.com
>
> I have also the same problem with the transition 20/40Mhz. In my DSP-93,
the problem is the 9 VAC transformer.
> Verify the correct voltage in resistor 0.22 ohms and/or the jumps of 5
volts (no below of 4.9 volts).

```

The DSP-93 is running correctly. I am in the tests phase.

73, de Jabi, EA2ARU.

Jabi Aguirre, EA2ARU  
gobier02@sarenet.es

---

## 171. RE: [DSP-93:1124] Kit shipment update?

```

From: j.d.melton.slh0613@oasis.icl.co.uk
Date: Thu, 20 Jul 95 11:20:36 BST
To: dsp-93@tapr.org
Message-ID: <9507201020.AA18750@getafix.oasis.icl.co.uk>
Rendered body type: text/plain

```

Well the response was great - 1 hour later and it arrived. Now  
can I convince the family that I need to take the soledring  
iron, etc, on vacation!  
Thanks, now the fun starts.

John Melton g0orx/n61yt

---

## 172. TNC for the DSP-93

```

From: gwyn@paccomm.com (Gwyn Reedy, WIBEL)
Date: Thu, 20 Jul 95 06:49:22 UTC
To: taprdsp-93
Message-ID: <1277@paccomm.com>
Rendered body type: text/plain

```

Query for DSP-93 owners.

PacComm is designing a TNC for use in a proprietary AVL terminal. Our goals  
are to minimize the cost for volume production, among others. The board is  
going to be approximately 4.5 x 6.0 inches per the customer's specification.

This width is required to fit an existing PacComm extruded cabinet ( a double  
height TINY-2-like case) and the length is needed to contain all the components.

Turns out that is almost exactly the size of the DSP-93 boards, so I got to  
thinking. (The guys here call me 'Oh By the Way' sometimes for adding extra  
features to new designs, HI). With very little difficulty a modem disconnect  
header could be added to the design positioned to directly plug into the  
connector labeled 'TNC'(and which goes via ribbon cable to the 'Interface Port'  
on the rear panel. Then, the TNC serial port could be wired to a 20 pin  
connector so that cable from the Interface Port could plug directly in and  
serve as the RS-232 port.

If we position the mounting holes correctly, it would be an easy bolt-in.

Only considerations not fitting the 'no solder, no metal work' plan are these: To avoid overloading the existing power supplies, one would have to tap the AC input (after the fuse?) and run that wire to the TNC which would have its own power supply circuits. Also, if you wanted the conventional TNC LEDs to be visible out the front of the case, some drilling would be needed. (We could set up a plan to provide re-drilled plates if you turn in your old one...)

This TNC would be TNC-2 compatible so you can run TAPR 1.9 or PacComm code or whatever you want to.

I'd think a price of \$99 (with 10% donated to P3D) would be likely. Probably available by end of August-to mid-September.

What I need is some reaction to gauge interest. If no interest, we won't bother. If there is interest, we'll see if there is room for the two extra connector positions and the AC based power supply on the board.

Summary: This board would be an easy bolt-in to the DSP-93. A 10 MHz TNC-2 compatible with serial baud rates up to 38.4kb. No other special support for the DSP-93 unless some easy to include ideas are contributed. The DSP-93 support is a secondary function of this board, and there will be lots of 'solder filled holes' where AVL components are not mounted.

All comments welcomed.

73,  
Gwyn

-----  
Gwyn Reedy, WIBEL      gwyn@paccomm.com      WIBEL@amsat.org  
+ (813) 874-2980      Fax: + (813) 872-8696      BBS: + (813) 874-3078 (V.34)  
PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

---

## 173. TNC for the DSP-93

From: robertsm@JSC.MIL  
Date: Thu, 20 Jul 1995 08:04:58 -0400  
To: dsp-93@tapr.org  
Message-ID: <95Jul20.080503edt.29441@annap2.jsc.mil>  
Rendered body type: text/plain

Would be interested in the internal TNC idea from Paccomm, especially if the TAPR TNC for the DSP-93 is not going to be available soon. I want to keep the number of boxes, cables, and interconnect cables to a minimum for portable operation.

73 Mel W3MR robertsm@jsc.mil

---

## 174. Re: [DSP-93:1127] TNC for the DSP-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 20 Jul 1995 10:05:14 -0500  
To: dsp-93@tapr.org, tnc95@tapr.org  
Cc: gwyn@paccomm.com  
Message-ID: <v02120d00ac341b0bb667@[204.96.0.99]>  
Rendered body type: text/plain

Gwyn,

Interesting concept. A tightly integrated TNC is really needed for the DSP-93. As I understand your solution, the TNC board would interface to the DSP-93 only via the 'TNC' connector on the DSP-93. Your TNC card would have its own RS-232 port then wired to use the DB-25 cable now labeled Interface Port. This would leave the DSP-93/PacCommTNC unit requiring two serial ports to operate it. One for the TNC I/O and one to control/load the DSP-93 software.

For certain uses of the DSP-93, this combo would work well. However, for others (mine specifically) the requirement of two serial ports would be far less than ideal. It would probably preclude using the DSP-93 in an automated satellite operation where switching the DSP-93 modems for different satellites is required.

A couple comments on your design:

1. The connector to the DSP-93 'TNC' connector should provide access on your card to the Gnd (15), Hi (3), and the four lines needed to configure the UP/DN/PTT initialization (7, 14, 16, 18). Also remember the configuration of the DSP-93 'TNC' connector is similar, but not exactly equal, to a TNC-2 Modem Disconnect Header.

2. Power could be most easily obtained if you provided a mating connector that would connect to the 4x1 Interboard connector stack JP205/JP100. Then all you would need to provide is fuse, rectifier, etc. Plug and Play!

3. Other considerations would be non-interference to the existing speaker, Interface Port, Reset switch and Volume control.

Is your \$99 price target built or a kit? At that price I would probably get it as a 'nother neat gadget.

What firmware would be provided?

Thanks for the "(with 10% donated to P3D)" idea.

Ron W5RKN

>Query for DSP-93 owners.

>

>PacComm is designing a TNC for use in a proprietary AVL terminal. Our goals  
>are to minimize the cost for volume production, among others. The board is  
>going to be approximately 4.5 x 6.0 inches per the customer's specification.

>

>This width is required to fit an existing PacComm extruded cabinet ( a double  
>height TINY-2-like case) and the length is needed to contain all the  
>components.

>

>Turns out that is almost exactly the size of the DSP-93 boards, so I got to  
>thinking. (The guys here call me 'Oh By the Way' sometimes for adding extra  
>features to new designs, HI). With very little difficulty a modem disconnect  
>header could be added to the design positioned to directly plug into the  
>connector labeled 'TNC'(and which goes via ribbon cable to the 'Interface Port'  
>on the rear panel. Then, the TNC serial port could be wired to a 20 pin  
>connector so that cable from the Interface Port could plug directly in and  
>serve as the RS-232 port.

>

>If we position the mounting holes correctly, it would be an easy bolt-in.  
>Only considerations not fitting the 'no solder, no metal work' plan are  
>these: To avoid overloading the existing power supplies, one would have to  
>tap the AC input (after the fuse?) and run that wire to the TNC which would  
>have its own power supply circuits. Also, if you wanted the conventional TNC  
>LEDs to be visible out the front of the case, some drilling would be needed.  
>(We could set up a plan to provide re-drilled plates if you turn in your  
>old one...)

>

>This TNC would be TNC-2 compatible so you can run TAPR 1.9 or PacComm code  
>or whatever you want to.

>

>I'd think a price of \$99 (with 10% donated to P3D) would be likely. Probably  
>available by end of August-to mid-September.

>

>What I need is some reaction to gauge interest. If no interest, we won't  
>bother. If there is interest, we'll see if there is room for the two extra  
>connector positions and the AC based power supply on the board.

>

>Summary: This board would be an easy bolt-in to the DSP-93. A 10 MHz TNC-2  
>compatible with serial baud rates up to 38.4kb. No other special support  
>for the DSP-93 unless some easy to include ideas are contributed. The  
>DSP-93 support is a secondary function of this board, and there will be  
>lots of 'solder filled holes' where AVL components are not mounted.

>

>All comments welcomed.

>

>73,  
>Gwyn

>

>Gwyn Reedy, W1BEL      gwyn@paccomm.com      W1BEL@amsat.org

>

>+(813) 874-2980      Fax:+(813) 872-8696      BBS: +(813) 874-3078 (V.34)

>

>PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

Ron W5RKN

also:  
rparsons@bga.com

## 175. Re: [DSP-93:1124] Kit shipment update?

From: Greg Jones <wd5ivd>  
Date: Thu, 20 Jul 1995 10:38:47 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507201538.KAA09270@dingus.n5lyt.datarace.com>  
Rendered body type: text/plain

It was shipped Monday -- arrived England Tuesday. Times after that are unknown and dependent on the local government.

Dorothy informs me it was shipped to your company. ICL image systems.

Cheers - Greg

>  
> Can anyone update me on the status of the kit shipment? Have  
> all the ordered kits gone out yet? I have not received mine and  
> will be away for 3 weeks from 22nd July, so will not be able to  
> receive any packages. When should I start worrying about the  
> shipment going astray?  
> Thanks, John Melton g0orx/n6lyt  
>

---

## 176. Re: [DSP-93:1126] RE: Kit shipment update?

From: Greg Jones <wd5ivd>  
Date: Thu, 20 Jul 1995 10:42:04 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507201542.KAA09488@dingus.n5lyt.datarace.com>  
Rendered body type: text/plain

Well - it arrived before I could respond -- I like those.

Cheers - Greg

>  
> Well the response was great - 1 hour later and it arrived. Now  
> can I convince the family that I need to take the soledring  
> iron, etc, on vacation!  
> Thanks, now the fun starts.  
>  
> John Melton g0orx/n6lyt  
>

---

## 177. MFJ-1270C/DSP-93 hookup info

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 20 Jul 1995 16:22:24 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507201630.MAA08450@camel.campbell.edu>  
Rendered body type: text/plain

Hi Mel and the rest of our growing DSP-93 Gang,

Here are the details of how I hooked up my MFJ-1270C to the DSP-93:

=====

"Running a cable from the DSP-93 to the MFJ-1270C TNC-2" by Mark Hammond, KC4EBR

=====

1) My MFJ-1270C is serial number 010263xx. Others in this range, and after for awhile, should be similar.

2) I did NOT have to cut any traces on the modem disconnect header, J4. I did NOT cut the trace on the MFJ-1270C board between disconnect header pins 1 and 2. This is a(n) (un)mod that I find allows the DCD light on the MFJ-1270C to blink in sympathy with the DCD light on WB5IPM Frank's code for the DSP-93.

3) Basically, by cutting traces near the TTL connector J5 I have disabled the unit from TTL operation. As I use the RS-232C serial port for connection to my computer, this is of no consequence. The cut traces are easily repaired in the event you need to revive the TTL connector function. This little modification converts your TTL connector on the back into an "external mini-TNC modem disconnect header"

At or near J5, cut the tiny circuit board traces going to pins 1(RXD), 2(DCD), and 5(TXD). The (xxx) indicates the silkscreen markings for the TTL serial connector labeled on the back of the MFJ-1270C. Pin 1(RXD) is closest to the 1/8" external speaker jack, and is labeled as such on the board. To cut the traces, I used an Exacto knife with a sharp blade, and used my continuity function on my DVOM to make sure I had broken the connection to pins 1, 2, and 5 on J5.



Next, prepare about a 6" peice of cable to run from the modem disconnect header J4 to the modified TTL connector J5. Tin the ends, and make sure it has at least 5 conducting wires. I used a shielded-4 conductor cable for my hookup.

Connect the cable and pins as follows:

| MFJ-1270C<br>J4 pin | MFJ-1270C<br>J5 pin                                        |
|---------------------|------------------------------------------------------------|
| 1 DCD               | 2                                                          |
| 5 PTT               | 4 (actually, I soldered to the JP13 pin farthest from C86) |
| 15 GND              | 3                                                          |
| 17 RXD              | 1                                                          |
| 19 TXD              | 5                                                          |

11-12 <-- BE SURE TO SHORT THESE ON J4  
13-14 <-- BE SURE TO SHORT THESE ON J4

On my MFJ-1270C, pins 5-6-9-10 are all shorted on the original board. This is necessary for connection to the DSP-93. No jumpers or cutting required on these pins.

Presto! You have a neat little internal cable that has converted your TTL connector on the back into an "external mini-TNC modem disconnect header"! As you look at the factory silkscreen labels on the TTL connector, you will see that only one label on the 5 wire connector is not correct.

| Silkscreen<br>label | MFJ-1270C<br>TNC signal                                             |
|---------------------|---------------------------------------------------------------------|
| RXD                 | RXD                                                                 |
| DCD                 | DCD                                                                 |
| GND                 | GND                                                                 |
| DTR                 | PTT <-- this one is not correctly labled now, but you can fix that! |
| TXD                 | TXD                                                                 |

4) Now, I used the little TTL female mating connector that was supplied with the MFJ-1270C when purchased, and made a cable from the MFJ-1270C to the DSP-93 DB-25 Interface Port connector using a DB-25 male connector with hood and a 5 conductor shielded cable.

| MFJ-1270C<br>TTL pin | DSP-93 Interface<br>Port Pin, DB25 male connector |
|----------------------|---------------------------------------------------|
| 1 (RXD)              | 9                                                 |
| 2 (DCD)              | 1                                                 |
| 3 (GND)              | 8                                                 |
| 4 (PTT)              | 3                                                 |
| 5 (TXD)              | 10                                                |

Now to put it all together and show you a chart you can use to help follow a signal thru all of the connectors:

| MFJ-1270C<br>TTL pin, J5 | DSP-93 Interface<br>Port Pin, DB-25 | MFJ-1270C TNC<br>Disconn. Pin, J4 |
|--------------------------|-------------------------------------|-----------------------------------|
| 1 (RXD)                  | 9                                   | 17                                |
| 2 (DCD)                  | 1                                   | 1                                 |
| 3 (GND)                  | 8                                   | 15                                |
| 4 (PTT)                  | 3                                   | 5                                 |
| 5 (TXD)                  | 10                                  | 19                                |

Be sure to short pins 11-12 together, and pins 13-14 together on the MFJ-1270C disconnect header J4.

I hope this helps. This allows me to unhook the MFJ-1270C from the DSP-93 without having to take the cover off. It also makes the occurences of shorts or broken leads on the MFJ-1270C wiring just about obsolete.

Mark L. Hammond [KC4EBR]

## 178. RE: [DSP-93:1124] Kit shipment update?

From: Bob Smith <rsmith@internetmci.com>  
Date: Thu, 20 Jul 1995 12:03:23 -0400  
To: "dsp-93@tapr.org" <dsp-93@tapr.org>  
Message-ID: <01BA56A1.33482740@usr13-dialup20.Atlanta.mci.net>  
Rendered body type: text/plain

Last I heard John (from Dorothy on Tuesday) they were waiting on some resistors for the last couple of dozen kits that their supplier shorted them. She was hoping they would come yesterday then kits out today UPS.

Maybe this isn't a bad thing - they may replace the mistaken chip for us.

Bob. Waiting anxiously as well.

-----  
From: j.d.melton.slh0613@oasis.icl.co.uk[SMTP:j.d.melton.slh0613@oasis.icl.co.uk]  
Sent: Thursday, July 20, 1995 3:43 AM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1124] Kit shipment update?

Can anyone update me on the status of the kit shipment? Have all the ordered kits gone out yet? I have not received mine and will be away for 3 weeks from 22nd July, so will not be able to receive any packages. When should I start worrying about the shipment going astray?  
Thanks, John Melton g0orx/n6lyt

---

### 179. Another success story!

From: Greg Jones <wd5ivd>  
Date: Thu, 20 Jul 1995 17:27:01 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199507202227.RAA16761@dingus.n5lyt.datarace.com>  
Rendered body type: text/plain

Doug Tennet inm Auckland called today and said his unit was up and fully operational. Great news Doug.

Out of the 140 units being shipped currently, I believe there are about 20 or so units left to be shipped. These should be shipped by Monday or Tuesday.

Cheers - Greg

---

### 180. Good News!

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Thu, 20 Jul 95 18:49:38 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507210049.AA10353@rgfn.epcc.Edu>  
Rendered body type: text/plain

Good News! My DSP-93 is now working! It's passed tests 1,2,3,4 and 6 but havnt hooked it to a radio.  
Update on No high speed problem....I found that a 74f00 that I tore off of a junk pcboard works! (I scrambled to the ic books to find something close.) I will replace it when the new 74s03 comes in.  
I feel much better now that I have been watching them flashing leds from the testled program for about 30 min....let the fun begin!  
charlie wa5kyv  
ab870@rgfn.epcc.edu

---

### 181. Re: Good News!

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 21 Jul 1995 01:42:20 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507210150.VAA10193@camel.campbell.edu>  
Rendered body type: text/plain

Excellent news, Charlie. Thanks to Ron for figuring that one out. Those 74xx03 chips caused a lot of headaches during beta testing, too. Glad Ron remembered!

Now, aren't you glad you have email? ;-)

>Good News! My DSP-93 is now working! It's passed tests 1,2,3,4 and 6 but  
>havnt hooked it to a radio.  
>Update on No high speed problem....I found that a 74f00 that I tore off  
>of a junk pcboard works! (I scrambled to the ic books to find something  
>close.) I will replace it when the new 74s03 comes in.

>I feel much better now that I have been watching them flashing leds from  
>the testled program for about 30 min....let the fun begin!  
>charlie wa5kyv  
>ab870@rgfn.epcc.edu  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 182. Yaesu Beta test report #11

From: w6shp@amsat.org (Howard Sodja)  
Date: Thu, 20 Jul 1995 20:29:48 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507210329.UAA21035@hopf.dnai.com>  
Rendered body type: text/plain

Hello Frank,

Increasing the rxd signal level for FSK from 1 to 1.2 v p-p really made a difference on the PSK mic click tracking. On my 4 test passes, mic click was only lost once, and that was an exceptionally deep QSB that neither RHCP or LHCP could pull up. I even had a 78 degree high pass that kept lock, while the mic click beeps became a steady tone during the zenith of the pass. If it were not for two low throughput passes, throughput appears to not be compromised by the flat topping at 5 v p-p as seen at TP1. Perhaps on those two passes the bird was slow, or I may have had some local noise here, as sometimes happens.

My "no signal" noise level with the present rxd setting is solid at 2 v p-p with noise spikes making a 3 v p-p noise envelope. I now do get an occasional false mic click but it is infrequent enough to not be a serious problem. I had one bad incident of false mic clicks when my neighbor started his motor cycle and ignition noise was clearly audible. But my TAPR hardware modem reacts similarly to strong ignition peaks.

I will back down my FSK rxd level to 1.1 volts to see if this lessens those false clicks, as I had none with 1 v p-p. At 1.2 v p-p the mic click tracking is definitely better than with my TAPR hardware modem. I feel I am at the threshold where better tracking means more noise induced clicks, and immunity to false noise clicks means loosing lock as higher levels of very weak signals. My TAPR hardware modem false clicks now and then, less often than the DSP-93 with my 1.2 v p-p FSK setting, but more often than the 1 v p-p setting. I'll see if 1.1 v p-p does the trick.

I am attaching my pb.log file to this message as there are few enough passes for you to concretely see the comparisons.

Lindenblads, TAPR hardware modem

|                                            |               |              |                   |
|--------------------------------------------|---------------|--------------|-------------------|
| 95/07/10 19:11:57 - 19:22:49               | : Max=153 Bps | Gross=50 Bps | Total Bytes=33030 |
| 95/07/10 20:50:21 - 20:58:45               | : Max=153 Bps | Gross=49 Bps | Total Bytes=25027 |
| 95/07/11 20:21:41 - 20:32:11               | : Max=153 Bps | Gross=47 Bps | Total Bytes=29830 |
| 95/07/12 05:58:19 - 06:10:30               | : Max=153 Bps | Gross=37 Bps | Total Bytes=27704 |
| 95/07/15 06:13:40 - 06:23:22               | : Max=159 Bps | Gross=68 Bps | Total Bytes=40027 |
| 95/07/15 20:05:29 - 20:17:10               | : Max=155 Bps | Gross=49 Bps | Total Bytes=34794 |
| Lindenblads, psk93x1b 1.0 v p-p on FSK RXD |               |              |                   |
| 95/07/16 19:36:37 - 19:48:08               | : Max=154 Bps | Gross=65 Bps | Total Bytes=45298 |
| 95/07/17 06:54:46 - 07:05:17               | : Max=153 Bps | Gross=55 Bps | Total Bytes=34734 |
| 95/07/17 19:07:45 - 19:18:31               | : Max=153 Bps | Gross=55 Bps | Total Bytes=35935 |
| 95/07/17 20:46:54 - 20:57:11               | : Max=153 Bps | Gross=42 Bps | Total Bytes=26340 |
| Lindenblads, psk93x1b 1.2 v p-p on FSK RXD |               |              |                   |
| 95/07/18 06:23:20 - 06:35:59               | : Max=153 Bps | Gross=43 Bps | Total Bytes=32666 |
| 95/07/18 20:18:45 - 20:29:22               | : Max=153 Bps | Gross=19 Bps | Total Bytes=12646 |
| 95/07/19 05:55:58 - 06:06:44               | : Max=153 Bps | Gross=23 Bps | Total Bytes=15384 |
| 95/07/19 19:47:38 - 20:00:49               | : Max=153 Bps | Gross=59 Bps | Total Bytes=47372 |
| 95/07/20 19:19:47 - 19:31:37               | : Max=153 Bps | Gross=60 Bps | Total Bytes=42870 |

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

## 183. Re: PacComm TNC

From: Greg Jones <wd5ivd>  
Date: Fri, 21 Jul 1995 01:58:31 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199507210658.BAA25837@dingus.n5lyt.datarace.com>

Rendered body type: text/plain

Hello Gwyn,

Thanks for your posting to the DSP-93 group. Glad to see you on the list.

The concept you have made concerning adapting an upcoming PacComm product for compatibility to the TAPR/AMSAT DSP-93 is terrific.

It will immediately fill two needed areas for the DSP-93: 1) provide a commercially available plug-n-play (i.e non-kit) TNC option and 2) provide a TNC that is available now. I should have thought of this sooner and suggested it myself. You told me at HamCom about the unit and it just didn't dawn on me about this possibility.

As you know, we are working on a unit to fulfill several areas, one of which is the DSP-93 requirement -- but as you also know our development time is a 'little' longer with volunteer design and layout than what you can do commercially. We are probably about 3-6 months away from being able to offer it and the need for an internal TNC for the DSP-93 has been a strong one from the beginning. Having a unit like yours available will hopefully increase DSP-93 kit sells. Eventually, when the TNC-95 is available, the profits from it will be used to provide funds for the further and final development of the DSP-93 ethernet interface and possibly the other radio I/O board -- both of which have been designed and prototyped, we just need the money to move to a second stage.

I am leaving town shortly and will be out of touch. I'll bring this up in the DSP-93 development group and get someone from there to contact you regarding the mechanical and interface issues.

Please keep me and the list informed as to progress on the design and production. From the response I read, it looks like you have at least a few units already sold. Always a good indication.

Please let me know if you have any other possible connections in the future. These types of links only make the TAPR/AMSAT DSP-93 and your products stronger.

Cheers - Greg, WD5IVD

---

## 184. Re: [DSP-93:1137] Yaesu Beta test report #11

From: fperkins@onramp.net  
Date: Fri, 21 Jul 1995 19:23:04 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507220023.TAA07622@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Howard,

Thanks for the log data. I am interested in the results with the FSK 1.1 v reference when available.

Do you plan to go to either the DCC or AMSAT conference?

73 Frank WB5IPM

---

## 185. Another DSP-93 up and running

From: rcox@holli.com (Ron Cox)  
Date: Sat, 22 Jul 1995 15:44:27 -0600  
To: dsp-93@tapr.org  
Message-ID: <ac371aec000210041676@[198.70.38.184]>  
Rendered body type: text/plain

I just finished the operational testing of my June build DSP-93 and everything checks out so far. I did have a problem with a missing nut for the Pwr/Vol control. I could not find an nut that fit in my junk box, so I went to the local Radio Shack to buy a pot with a nut. The one I got there didn't fit either so I used a nut with the wrong threads to hold it in place and it seems to be OK.

On test 5 (page 30 in the Assembly Manual) it said to monitor J203 pin 10 for the output. I must have looked for an hour for "J203" because I knew that on board 1 ther was a J103 and a JP103 which was different. But I finally figured out that "JP203" must be the correct place.

Other minor Assembly Manual inconsistancies were:

Page 23: Board 2 Check: reference to square pad of C233 in paragraph 6, and

a reference to the square pad of C227 in the next paragraph. It is easier to probe the square pad of C227, so why not just point people to it first.

Page 22: Volume Control:

4th Paragraph - the last reference to "(square pad)" should be deleted as it is after the reference to terminal 1 of the volume control.

Page 5: Need to list 1 RS274-1573A coaxial power plug in "Miscellaneous" (I used the one sent!)

These are all minor items in what is a very excellent assembly manual.

Now on to the software and Radio interface.

Ron Cox  
W9KFB  
rcox@holli.com

---

## 186. Re: [DSP-93:1140] Another DSP-93 up and running

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 22 Jul 1995 16:21:10 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac371b481a6b@[204.96.0.99]>  
Rendered body type: text/plain

Ron Cox

>I just finished the operational testing of my June build DSP-93 and  
>everything checks out so far.  
...  
>Now on to the software and Radio interface.  
>

Thanks for your comments and corrections on the Assembly Manual. These corrections will be included in the next Build Update.

Good luck on the interfacing to your radio. Keep us informed.

Ron W5RKN

also:  
rparsons@bga.com

---

## 187. update on My dsp93

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Sat, 22 Jul 95 20:00:57 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507230200.AA00546@rgfn.epcc.Edu>  
Rendered body type: text/plain

The new DSP93 is working fine. I now have copied rtty,hf packet and vhf 1200b packet. Actually made a connection on hf packet! David's hf rtty program works very good.

I do need to work on my radio interface more since the DSP will be in Xmit sometimes when turned on. (Still messin with the header on the IO port configuration setup.) I dont know all I need to know yet to make suggestions on this IO port config setup but it does seem confusing.

Ron,  
Thanks for all the help on the No high speed problem. I did receive a replacement 74s03 (U115) today. That was fast service. I will replace the 74f00 that I subed with it soon.  
Again...Thanks

Also, someone here reported that they didnt get a nut for the Pwr/Vol control..ditto here...but I did find one in the junk box...no biggie..otherwise looks like a nice kit....

Now on to the bleeding edge of technology!

Charlie wa5kyv  
ab870@rgfn.epcc.edu

---

### 188. Re: [DSP-93:1142] update on My dsp93

From: danpipes@primenet.com (Dan Pipes)  
Date: Sat, 22 Jul 1995 20:04:23 -0700  
To: dsp-93@tapr.org, dsp-93@tapr.org  
Message-ID: <199507230304.UAA04188@mailhost.primenet.com>  
Rendered body type: text/plain

At 21:17 07/22/95 -0500, Charlie B Wood wrote:  
>  
>  
>The new DSP93 is working fine. I now have copied  
>rtty,hf packet and vhf 1200b packet. Actually made  
>a connection on hf packet! David's hf rtty program  
>works very good.  
>Now on to the bleeding edge of technology!  
>  
>Charlie wa5kyv  
>ab870@rgfn.epcc.edu  
>

Keep it up Charlie... Now you have me reading this and getting more and more  
interested in the dsp93!! Sheezzz... you are expensive to know <g>  
Actually the unit sounds very good I am still waiting for a demo...  
Dan Pipes  
danpipes@primenet.com

---

### 189. Re: [DSP-93:1142] update on My dsp93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 22 Jul 1995 23:15:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac377cd0045e@[204.96.0.79]>  
Rendered body type: text/plain

Charlie wa5kyv

...  
>I do need to work on my radio interface more since  
>the DSP will be in Xmit sometimes when turned on.  
>(Still messin with the header on the IO port  
>configuration setup.) I dont know all I need to  
>know yet to make suggestions on this IO port  
>config setup but it does seem confusing.  
>  
>  
>Charlie wa5kyv  
>ab870@rgfn.epcc.edu

Charlie,

What radio are you using? How does the radio utilize the UP/DN/PTT lines?  
Active high or low? How do you have the initialization jumpers configured?

Ron W5RKN

also:  
rparsons@bga.com

---

### 190. HF\_93U1/U2

From: ljs@west.net (L.J.Shepherd)  
Date: Sat, 22 Jul 1995 23:45:50 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507230646.XAA28031@acme.sb.west.net>  
Rendered body type: text/plain

Hello Group:

Would like to try out WB5IPM's AMTOR modem that utilizes KC7WW's  
TOR.exe program. I checked the latest disk software but did not seem to  
find it. Is it ready for release.....I understand the file is HF\_93U1/U2.

Thanks very much. 73, Jim K6OYY

---

### 191. Software for HF modems

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 23 Jul 1995 07:08:12 -0500

To: dsp-93@tapr.org  
Message-ID: <v02120d00ac37ebaf1169@[204.96.0.70]>  
Rendered body type: text/plain

What software (on your computer) are people using with the HF DSP-93 modems?

Are you loading the HF modem program outside of this software?

How are you loading the HF program?

Ron W5RKN

also:  
rparsons@bga.com

---

## 192. Rep..Update

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Sun, 23 Jul 95 06:26:19 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507231226.AA12699@rgfn.epcc.Edu>  
Rendered body type: text/plain

>What radio are you using? How does the radio utilize the UP/DN/PTT lines?  
>Active high or low? How do you have the initialization jumpers configured?  
>Ron W5RKN

On HF, I am using a Yaesu FT-757gxii and the UP/DN/PTT lines all short to ground on Xmit. On VHF 1200 pkt, I have a Kenwood allmode tm-9130 which also shorts to ground on xmit (havnt checked up/dn yet). I have a jumper from pin 18 to 3 on the header for int. I havnt tried the freq control yet on the hf but have noticed that David's slick RTTY program allows it.

What I have noticed is the state of the PTT will vary on startup...If the TNC is unplugged and the dsp turned on, the dsp will not key. If the TNC is plugged in and is off the dsp will key the PTT. Soooo there is sequence to startup and I DO have to double check on startup NOT to Xmit (just like the Operations says :-)) I wish the DSP just didnt key anything til told.

I have a question....On the 757, there is 12 volts on the key lines and the DSP does key the rig but since the 12 volts is there, Should I change U205 to a 7406?

Of note here:

Since I have a varity of TNC cables made up with 5pin dins (wired TNC2 standard), I put 7 pin din jacks on the DSP cables. The 7 pin din will accept 5 pin dins allowing me to use all the cables I allready have plus extra pins for aux and freq control for future use. This setup allowed me to do some very quick testing, even using my FT530 HT to receive the local node right after the basic testing.

I also need to figure out how to wire the tm-9130 for 9600. Thats the one rig I have never seen a mod for (I would have to own that one). There's some locals here on 9600 so I do have someone to test 9600 with.(One of them (a good friend) is monitoring this conf and may get a DSP93.....hello dan:-))

Charlie wa5kyv a DSP93ier  
ab870@rgfn.epcc.edu

---

## 193. Re: [DSP-93:1147] Rep..Update

From: fperkins@onramp.net  
Date: Sun, 23 Jul 1995 09:17:41 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507231417.JAA13300@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Charlie,

Here is the problem. When the TNC is plugged into the DSP-93 and is turned OFF it pulls the PTT line going to the DSP-93 to ground. The DSP-93 thinks it is getting a legitimate PTT command. This is a hardware thing. I have put a PTT time out in most of my code that forces the PTT back off if the SW does not see a "1" TX bit every so often.

When you load one of my modems with the TNC turned off, PTT should blink on but then back off. Is this happening?

I try to get into the habit of turning the TNC ON before loading a program into the DSP-93.

73 Frank WB5IPM

## 194. Re: [DSP-93:1145] HF\_93U1/U2

From: fperkins@onramp.net  
Date: Sun, 23 Jul 1995 09:21:03 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507231421.JAA13452@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Jim,

Here is the AMTOR version for use with Johan's TOR.EXE. It will receive AMTOR (non-FEC?) with a standard RS-232-C cable. I think you have to make up an a cable adaptor to use the TX side. Please check Johan's docs for more info. It has been a year since I worked on this so I am a bit rusty on the details.

73 Frank WB5IPM

```
; Experimental AMTOR HF modem, 94.08.18 @ 13:10 CDST
; Version for TAPR/AMSAT DSP-93, File - AMTR93U1.ASM
; TLC32044 AIO @ 10,822.51 samples/sec (92.4 usec/sample), 40 MHz CPU clock
; AIO initialization from Lon Cecil's BST5.ASM program
; Uses radio port #1, UART SIO (see below)
; Updates:
; adaptive threshold based on Lon Cecil's "leaky-peak" detector
; CTS(7) is PTT, DTR(1) is RX, DCD(4) is TX
; 0.07% LPF added to match AMTOR data rate
; Development code, has not been thoroughly tested!!
; This software offered AS IS, without warranty or guarantee of any kind!
; No cost, non-exclusive license granted to all users of the TAPR/AMSAT
; DPS-93 kit (Amateur Radio use only)
; CIS: 76610.170, Internet: fperkins@onramp.net
; Copyright Frank H. Perkins, Jr., WB5IPM, 1992, 1993, 1994, 1995
```

AMTR93U1.OBJ (clip out object code with a word processor)

```
:18200000FF801008FF801070FF801076FF801008CE01C808CE07CE0351
:18201800CE08D00180356002E702FE8011D7D00100756002E702FE8094
:1820300011D7D00140356002E702FE8011D7C800CE37CE20D00100200D
:182048006004CA006061CE00CE1FD00100036061CE1FD0010227606199
:18206000CE1FD00100036061CE1FD0012C5A6061CE1FD001000360615F
:18207800CE1FD0012A546061CE1FCE01D00100306004CA0060626063E3
:182090006064606560666067606A606B606C606D606E606F60706071B6
:1820A800D00101906069CA00D000039F5588CA00CB5F60A0D000033ED7
:1820C0005588CA00CB5F60A0D00003325588CA00CB0A60A0D300033CA4
:1820D800CE005500FF80106D20006060FE80107ACE00CE262061600145
:1820F000CE00CE262062D00504006062E6622A6068632063D003008086
:18210800F380108C2062D00502006062FF8010902062D004FDDFF606262
:182120002063D200039F558A6080D10003FE5589A000CA00CB5F5C90C1
:1821380011ECCE156B632063D0030048F38010A9D00100486063FF80BC
:1821500010B12063D0020048F18010B1D001FFB86063D000033B5588B1
:18216800CB095690568020636080CE236063558B3C803863CE14D200CD
:18218000033E558A6080D100039D5589A000CA00CB5F5C90132DCE1555
:182198006B632063D00307D0F38010D5D00102C96067FE801146FE8026
:1821B000119E2063106E6063F48010E7D0010400606FE36FCA006071A8
:1821C800E171FF8010EED0010400606FE36FCA016071E1712069F38050
:1821E0001101D0010600606FE36F85702070D0040010F5801101206865
:1821F800D00500016068FF8011052068D004FFFE60682070D004008097
:18221000F58011142069F380110FCD0160692064D0020C91FF80111ACC
:18222800D001019060692064D0020D926064D0034000F2801120606440
:18224000CA0009646865D00112AC006558652265D004FFFC6061206733
:18225800F2801132CD016067FF8011382062D00501006062FF80113C76
:182270002062D004FEFF60622062D004FBFF6062E662C808E702C80066
:18228800EB68CE2655002063D0030776F380115AC8082002D0050080AA
:1822A000D004FFBF6002C8002068D004FF3F6068FF80119D2063D00385
:1822B8000334F380116DC8082002D0050040D004FF7F6002C8002068DB
:1822D000D004FF3F6068FF80119D2063D0020334F380117EC80820026F
:1822E800D004FF3F6002C8002068D004FF3F6068FF80119D2063D002BE
:182300000776F3801191C8082002D004FF3F6002C8002068D005004068
:18231800D004FF7F6068FF80119DC8082002D004FF3F6002C8002068B0
:18233000D0050080D004FFBF6068CE262063106BF28011A6206BD0026E
:182348000064606B206BF38011AF406B496AD00354F6686B606A2063F5
:18236000106DF48011B7206DD0030064606D206DF18011C0406D496CEA
:18237800D00254F6686D606C206B006DCE19606E206ED0030320F380EC
```



:1823900011CED0010320606EFF8011D6206ED0020320F18011D6D00182  
:1823A800FCE0606ECE26C2FFFE8011DDFE8011DDCE26C2FFFE8011E3BF  
:1823C000FE8011E3CE26C2FFC3FF558BFB9011E5558AFB9011E4CE2668  
:1823D800000200070002FFF8FFF80005000E0002FFFEFFFF2000D0018DB  
:1823F0000000FFFE5FFF100120018FFFDFFEEFFFB0003FFF800050020D2  
:18240800000FFFC8FFBC002C0088001CFF53FF6800820117000DFEB24B  
:18242000FF21010101A0FFD5FE13FF0A018901EFFF80FDAFFF3001E539  
:1824380001E5FF30FDAFFF8001EF0189FF0AFE13FFD501A00101FF2121  
:18245000FEB2000D01170082FF68FF53001C0088002CFFBFCFFC8000F03  
:1824680000200005FFF80003FFBFFEEFFFD00180012FFF1FFE5000059  
:182480000018000DFFF2FFFEF0002000E0005FFF8FFF800020007000232  
:1824980000040003000300030002000200010000FFFEFFFCFFFAFF733  
:1824B000FFF4FFF1FFEDFFFAFFE6FFE3FFE0FFDEFFDCFFDFFDFFFE068  
:1824C800FFE4FFE8FFBF4FFF000C001C002F0043005A0072008C00A7A5  
:1824E00000C200DE00F90113012C01440158016B017A0185018D0191DF  
:1824F8000191018D0185017A016B01580144012C011300F900DE00C2C7  
:1825100000A7008C0072005A0043002F001C000CFFFFF4FFEBFFE45C  
:18252800FFE0FFDDFFDCFFDFFDEFFE0FFE3FFE6FFFAFFDFFF1FFF4EF  
:18254000FFF7FFFAFFFCFFE00000001000200020003000300048A  
:1825580000000320064009600C800F901290159018801B601E3020EC6  
:1825700002390262028A02B002D402F7031803360353036E0387039E61  
:1825880003B203C403D403E103EC03F503FB03FF040003FF03FB03F521  
:1825A00003EC03E103D403C403B2039E0387036E0353036031802F7BE  
:1825B80002D402B0028A02620239020E01E301B601880159012900F9A7  
:1825D00000C80096006400320000FFCEFF9CFF6AFF38FF07FED7FEA777  
:1825E800FE78FE4AFE1DFFD2FDC7FD9EFD76FD50FD2CFD09FCE8FCCA1B  
:18260000FCADF9C2FC79FC62FC4EFC3CFC2CFC1FFC14FC0BFC05FC01DE  
:18261800FC00FC01FC05FC0BFC14FC1FFC2CFC3CFC4EFC62FC79FC9273  
:18263000FCADFCCAFCE8FD09FD2CFD50FD76FD9EFD76FD2FE1DFA9F  
:18264800FE78FEA7FED7FF07FF38FF6AFF9CFFCE00000060006000769  
:1826600000070008000A000B000C000E0011001300160019001C002095  
:1826780000230028002C00310035003A00400045004B00510056005C60  
:18269000000620068006E0074007A007F0085008A008F00940099009D25  
:1826A80000A100A400A700AA00AC00AE00B000B100B100B100B100B006  
:1826C00000AE00AC00AA00A700A400A1009D00990094008F008A0085AA  
:1826D800007F007A0074006E00680062005C00560051004B0045004072  
:1826F000003A00350031002C002800230020001C00190016001300112C  
:12270800000E000C000B000A000800070007000600066E  
:00000001FF

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Please contact Greg Jones at TAPR or the author for information on commercial licenses of this software.

Frank H. Perkins, Jr.

## 195. Re: [DSP-93:1147] Rep..Update

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 23 Jul 1995 09:57:21 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac3812aa399d@[204.96.0.102]>  
Rendered body type: text/plain

Charlie wa5kyv

>  
>>What radio are you using? How does the radio utilize the UP/DN/PTT lines?  
>>Active high or low? How do you have the initialization jumpers configured?  
>>Ron W5RKN  
>

...  
>  
>What I have noticed is the state of the PTT will vary on startup.  
...

What do you mean by "startup"? As stated in the Operations Manual and the Assembly manual, on power-on, the DSP-93 PTT etc. lines may cause your transmitter to react due to power-up transients BEFORE the Monitor software gets a chance to set the lines correctly. This problem should NOT occur upon pressing the Reset button.

Are you seeing the problem on power-on or on Reset, or both?

>I have a question....On the 757, there is 12 volts on the key lines and  
>the DSP does key the rig but since the 12 volts is there, Should I  
>change U205 to a 7406?

This situation is addressed in the Operations Manual.

Ron W5RKN

also:  
rparsons@bga.com

---

## 196. Re: [DSP-93:1146] Software for HF modems

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Sun, 23 Jul 1995 15:04:31 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507231514.LAA29637@camel.campbell.edu>  
Rendered body type: text/plain

Ron,

For hot\_hf93, I use D93WE as both the terminal program to display the received data, and the loader to load the .obj file to the dsp-93. In this example, I load the .obj file from within the application.

As for the hfu\_xxx programs that are front-ends for TOR, for example, I use dspload.exe to load the .obj file, and then run the other application to serve as the terminal program. In this example, I load the .obj file before running the program.

>What software (on your computer) are people using with the HF DSP-93 modems?  
>  
>Are you loading the HF modem program outside of this software?  
>  
>How are you loading the HF program?  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 197. Re: [DSP-93:1122] modem.obj crashing?

From: Mills@huey.udel.edu  
Date: Sun, 23 Jul 95 12:42:32 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9507231242.aa03436@huey.udel.edu>  
Rendered body type: text/plain

Howard,

The latest HF FSK modem code does use slightly more narrow filters at about 300 Hz for shifts above 170 Hz; however, the 170-Hz shift filters are the same. I recommend using the matched filters (m8 command) at 170 Hz, rather than the IIR filters (m4 command) at 170-Hz shift. They are not that much harder to tune, but are better at vacuuming signals from HF crud.

I think what might be happening if you are copying in RTTY mode and the panel LEDs go dark is that the signal has dropped below the carrier gate, which is preset somewhat arbitrarily to avoid noise garble. The c{+} command can be used to adjust the carrier gate much like the sensitivity control on typical TNCs. I'm not sure what to tell you about the r (reset) command. When recognized, that command causes a wholesale modem reset (clears most data areas to zeros). Could its failure to respond be some trouble in your computer/modem interconnect?

I have found that using the D93WE.EXE program as a terminal control program sometimes hangs the print. Often, I can clear that by simply selecting another window on the screen, but without any commands to the modem. This problem does not occur with the Windows TERMINAL.EXE program, so I assume it is due some vulgarity between Windows and the DSP93 application.

The crashing symptoms you report are identical to those I was experiencing when my DSP93 fell heatstroke victim. Since my unit recovered, I have had no problems like that at all. For your sake, I hope your problems are my bugs, but there remains that possibility. Having spent many long and frustrating hours trying to gather evidence leading to resolution of heatstroke problem, I have to conclude there is not much you can do in the way of diagnostics, etc. The CPU brains appear to come unstuck and anything can happen.

I don't know why your unit seems to require a <CR> for anything, except echoing a <CR><LF> response. The code completely ignores all control ASCII characters, except ^D and ^F in transmit mode. I hear you on the status request thing, which is on my list. I continue to be cautious about enhancing the command suite of the modem, since my prime interest is in the signal processing area and maybe the best way, once you get the hang of it, is to embed command strings in the AT commands that most terminal programs can generate at a touch of a function key.

In any case, thanks for your comments; I hope you get some use from the program. Yes, the most convincing demonstration is to yank good copy from a weak SITOR station you can't hear, but can hear loud brasspounders on adjacent channels 500 Hz on either side.

Dave

---

## 198. Rep..Update

From: ab870@rgfn.epcc.edu (Charlie B Wood)  
Date: Sun, 23 Jul 95 10:48:09 MDT  
To: dsp-93@tapr.org  
Message-ID: <9507231648.AA02585@rgfn.epcc.edu>  
Rendered body type: text/plain

>When you load one of my modems with the TNC turned off, PTT should blink on  
>but then back off. Is this happening?  
Yes it is...Even if the PTT line is keyed, it will unkey.  
>I try to get into the habit of turning the TNC ON before loading a program  
>into the DSP-93.  
Will do and I am keeping that Operations Manual handy :-)

>73 Frank WB5IPM  
Thanks  
Charlie wa5kyv  
ab870@rgfn.epcc.edu

---

## 199. Re: [DSP-93:1123] hf modem

From: Mills@huey.udel.edu  
Date: Sun, 23 Jul 95 13:05:02 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9507231305.aa03493@huey.udel.edu>  
Rendered body type: text/plain

Jim,

Thanks for your comments and questions. Some have easy answers, some do not.

1. As mentioned in my last message, when using the d93we.exe (oop, got that wrong in my last post), I get exactly the symptoms you report. I believe this is due to some interaction between the d93we.exe program and the COM port or Windows, since it does not happen with the Windows terminal.exe program. The modem implements flow control from the

PC to the modem only by flapping the CTS lead to the PC, but only when the transmit buffer is 2/3 full. Unless you have very nimble fingers, or are transmitting a file, you would have a hard time exceeding 2/3 the buffer size, which is 1000 characters.

2. The r (reset) command is pretty blunt. It zeros everything except the TMC320 interface registers and presets those variables controlling the mode, as described in the documentation. Since the zeroing is done by block, it is hard to overlook a rogue variable that may remember a previous setting. I will check to be sure that really is the case.

3. Are you sure you are operating in full duplex to get characters echoed as you type? In that mode, presumably, received data gets converted from Baudot to ASCII, which means everything is upper case. You might be operating in digital loopback echo, which would echo everything exactly as typed. I use full duplex with my ICOM 761, which has a sidetone feature when transmitting. In this case, I get local copy of exactly what is going on the air. While this is comforting from a reliability point of view, the delay is ferocious, especially in SITOR mode. I'm not much bothered by that, since I spent many happy hours way back when the ARPANET was tiny and what you typed was sometimes what you saw, but often many seconds later.

4. Implementing a split screen would be really hard with the modem and require much fondling of ASCII escape sequences. I think this is more properly left to the PC terminal control program. I find that, once you get the hang of it, playing command melodies while copying data is not hard. The commands stand out, since they are in lower case and the data is in upper. Also, I find that, once the settings have been optimized (usually the defaults work just fine), that they do not need to be changed. I do think the interaction between the modes and other commands needs to be cleaned up. I would like to punch something that says "amateur RTTY" or "commercial RTTY" and have the thing do as bid.

I need to think about the hybrid FED/ARQ thing a bit. I continue to think that the real problem with SITOR is its awful rate, only 50%. Undoubtedly, this is the reason why some nonamateur stations like CFH use plain ugly 75-baud RTTY. That suggests it may be possible to enjoy the coding gain similar to FEC, but using a better code with a higher efficiency to achieve 75 baud throughput with a 14-bit codeword transmitted at 100 baud.

Again, thanks for your interest and comments.

Dave, w3hcf

---

## 200. Re: [DSP-93:1146] Software for HF modems

From: ljs@west.net (L.J.Shepherd)  
Date: Sun, 23 Jul 1995 11:39:54 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507231840.LAA10240@acme.sb.west.net>  
Rendered body type: text/plain

Ron:

I've been using the D93WE program, but have also made several contacts using Procom Plus for Windows. With the latter, I loaded via DOS using DSPLOAD. From the opening description in PCtor, it sounds as if that software is more than a simple comm program optimized for radio teletype use.....  
.....Jim K6OYY

>What software (on your computer) are people using with the HF DSP-93 modems?  
>  
>Are you loading the HF modem program outside of this software?  
>  
>How are you loading the HF program?  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>

>  
>

## 201. Re: [DSP-93:1149] Re: HF\_93U1/U2

From: ljs@west.net (L.J.Shepherd)  
Date: Sun, 23 Jul 1995 11:44:09 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507231844.LAA10272@acme.sb.west.net>  
Rendered body type: text/plain

Hi Frank:

Thanks very much for the quick response ! I've sent email to Johan to see if perhaps he's made some updates that would be useful. I appreciate you help and will let you know how things are going....thanks again !  
73, Jim K60YY

>Hi Jim,  
>  
>Here is the AMTOR version for use with Johan's TOR.EXE. It will  
>receive AMTOR (non-FEC?) with a standard RS-232-C cable. I think  
>you have to make up an a cable adaptor to use the TX side. Please  
>check Johan's docs for more info. It has been a year since I worked  
>on this so I am a bit rusty on the details.  
>  
>73 Frank WB5IPM  
>  
>; Experimental AMTOR HF modem, 94.08.18 @ 13:10 CDST  
>; Version for TAPR/AMSAT DSP-93, File - AMTR93U1.ASM  
>; TLC32044 AIO @ 10,822.51 samples/sec (92.4 µsec/sample), 40 MHz CPU clock  
>; AIO initialization from Lon Cecil's BST5.ASM program  
>; Uses radio port #1, UART SIO (see below)  
>; Updates:  
>; adaptive threshold based on Lon Cecil's "leaky-peak" detector  
>; CTS(7) is PTT, DTR(1) is RX, DCD(4) is TX  
>; 0.07% LPF added to match AMTOR data rate  
>; Development code, has not been thoroughly tested!!  
>; This software offered AS IS, without warranty or guarantee of any kind!  
>; No cost, non-exclusive license granted to all users of the TAPR/AMSAT  
>; DPS-93 kit (Amateur Radio use only)  
>; CII\$: 76610.170, Internet: fperkins@onramp.net  
>; Copyright Frank H. Perkins, Jr., WB5IPM, 1992, 1993, 1994, 1995  
>  
>AMTR93U1.OBJ (clip out object code with a word processor)  
>  
>:18200000FF801008FF801070FF801076FF801008CE01C808CE07CE0351  
>:18201800CE08D00180356002E702FE8011D7D00100756002E702FE8094  
>:1820300011D7D00140356002E702FE8011D7C800CE37CE20D00100200D  
>:182048006004CA006061CE00CE1FD00100036061CE1FD0010227606199  
>:18206000CE1FD00100036061CE1FD0012C5A6061CE1FD001000360615F  
>:18207800CE1FD0012A546061CE1FCE01D00100306004CA0060626063E3  
>:182090006064606560666067606A606B606C606D606E606F60706071B6  
>:1820A800D00101906069CA00D000039F5588CA00CB5F60A0D000033ED7  
>:1820C0005588CA00CB5F60A0D00003325588CA00CB0A60A0D300033CA4  
>:1820D800CE005500FF80106D20006060FE80107ACE00CE262061600145  
>:1820F000CE00CE262062D00504006062FE6622A6068632063D003008086  
>:18210800F380108C2062D00502006062FF8010902062D004FDF606262  
>:182120002063D200039F558A6080D10003FE5589A000CA00CB5F5C90C1  
>:1821380011ECCE156B632063D0030048F38010A9D00100486063FF80BC  
>:1821500010B12063D0020048F18010B1D001FFB86063D000033B5588B1  
>:18216800CB095690568020636080CE236063558B3C803863CE14D200CD  
>:18218000033E558A6080D100039D5589A000CA00CB5F5C90132DCE1555  
>:182198006B632063D00307D0F38010D5D00102C96067FE801146FE8026  
>:1821B000119E2063106E6063F48010E7D0010400606FE36FCA006071A8  
>:1821C800E171FF8010EED0010400606FE36FCA016071E1712069F38050  
>:1821E0001101D0010600606FE36F85702070D0040010F5801101206865  
>:1821F800D00500016068FF8011052068D004FFFE60682070D004008097  
>:18221000F58011142069F380110FCD0160692064D0020C91FF80111ACC  
>:18222800D001019060692064D0020D926064D0034000F2801120606440  
>:18224000CA0009646865D00112AC006558652265D004FFFC6061206733  
>:18225800F2801132CD016067FF8011382062D00501006062FF80113C76  
>:182270002062D004FEFF60622062D004FBFF6062E662C808E702C80066  
>:18228800EB68CE2655002063D0030776F380115AC8082002D0050080AA  
>:1822A000D004FFBF6002C8002068D004FF3F6068FF80119D2063D00385  
>:1822B8000334F380116DC8082002D0050040D004FF7F6002C8002068DB  
>:1822D000D004FF3F6068FF80119D2063D0020334F380117EC80820026F  
>:1822E800D004FF3F6002C8002068D004FF3F6068FF80119D2063D002BE  
>:182300000776F3801191C8082002D004FF3F6002C8002068D005004068

```

>:18231800D004FF7F6068FF80119DC8082002D004FF3F6002C8002068B0
>:18233000D0050080D004FFBF6068CE262063106BF28011A6206BD0026E
>:1823480000064606B206BF38011AF406B496AD00354F6686B06A2063F5
>:18236000106DF48011B7206DD0030064606D206DF18011C0406D496CEA
>:18237800D00254F6686D060C206B006DCE19606E206ED0030320F380EC
>:1823900011CED0010320606EFF8011D6206ED0020320F18011D6D00182
>:1823A800FCE0606ECE26C2FFFE8011DDFE8011DDCE26C2FFFE8011E3BF
>:1823C000FE8011E3CE26C2FFC3FF558BFB9011E5558AFB9011E4CE2668
>:1823D800000200070002FFF8FFF80005000E0002FFEFFFF2000D0018DB
>:1823F0000000FFE5FFF100120018FFFDFEEFFFB0003FFFB00050020D2
>:18240800000FFFC8FFBC002C0088001CFF53FF6800820117000DFEB24B
>:18242000FF21010101A0FFD5FE13FF0A018901EFFF80FDAFFF3001E539
>:1824380001E5FF30FDAFFF8001EF0189FF0AFE13FFD501A00101FF2121
>:18245000FEB2000D01170082FF68FF53001C0088002CFFBFCFFC8000F03
>:1824680000200005FFF0003FFFBFFEEFFFD00180012FFF1FFE5000059
>:182480000018000DFFF2FFFE0002000E0005FFF8FFF800020007000232
>:1824980000040003000300030002000200010000FFFEFFCFFFAFFF733
>:1824B000FF4FFF1FFEDFFFAFFE6FFE3FFE0FFDEFFDCFFDCFFDDFFE068
>:1824C800FF4FFEFBFF4FFF000C001C002F0043005A0072008C00A7A5
>:1824E00000C200DE00F90113012C01440158016B017A0185018D0191DF
>:1824F8000191018D0185017A016B01580144012C011300F900DE00C2C7
>:1825100000A7008C0072005A0043002F001C000CFFFFF4FFEBFFE45C
>:18252800FFE0FFD0FFDCFFDCFFDEFFE0FFE3FFE6FFFAFFEDFF1FFF4EF
>:18254000FFF7FFFAFFCFFFE000000010002000200030003000300048A
>:18255800000000320064009600C800F901290159018801B601E3020EC6
>:1825700002390262028A02B002D402F7031803360353036E0387039E61
>:1825880003B203C403D403E103EC03F503FB03FF040003FF03FB03F521
>:1825A00003EC03E103D403C403B2039E0387036E03530336031802F7BE
>:1825B80002D402B0028A02620239020E01E301B601880159012900F9A7
>:1825D00000C80096006400320000FFCEFF9CFF6AFF38FF07FED7FEA777
>:1825E800FE78FE4AFE1D0FD2FDC7FD9EFD76FD50FD2CFD09FCE8FCCA1B
>:18260000FCADFC92FC79FC62FC4EFC3FC2CFC1FFC14FC0BFC05FC01DE
>:18261800FC00FC01FC05FC0BFC14FC1FFC2CFC3CFC4EFC62FC79FC9273
>:18263000FCADFCCAFCE8FD09FD2CFD50FD76FD9EFD7FDF2FE1D0FE4A9F
>:18264800FE78FEA7FED7FF07FF38FF6AFF9CFFCE000000060006000769
>:1826600000070008000A000B000C000E0011001300160019001C002095
>:1826780000230028002C00310035003A00400045004B00510056005C60
>:18269000000620068006E0074007A007F0085008A008F00940099009D25
>:1826A80000A100A400A700AA00AC00AE00B000B100B100B100B100B006
>:1826C00000AE00AC00AA00A700AA400A1009D00990094008F008A0085AA
>:1826D800007F007A0074006E00680062005C00560051004B0045004072
>:1826F000003A00350031002C002800230020001C00190016001300112C
>:1227080000E000C000B000A000800070007000600066E
>:00000001FF
>
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>
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>
> Please contact Greg Jones at TAPR or the author for information on
> commercial licenses of this software.
>
> Frank H. Perkins, Jr.
>
>
>

```

## 202. Yaesu Beta test report #12

From: w6shp@amsat.org (Howard Sodja)  
 Date: Sun, 23 Jul 1995 14:16:30 -0700  
 To: dsp-93@tapr.org  
 Message-ID: <199507232116.OAA06542@hopf.dnai.com>

Rendered body type: text/plain

Hello Frank,

I kept my scope attached to TP1 and have found that the cause of my varying throughput is my varying noise level. I could see the crisp waveform fuzz out in qsb dips at higher signal levels when my noise level was high. Likewise, the false clicks are greater as my noise level goes up. The passes with 1.1 v p-p had almost as many false click as with 1.2 v p-p when my noise envelope was peaking to 4 v p-p. Mean BPS throughput for my 4 high noise level passes was 41, 40, 40 and 47. But when my noise was down to 3 v p-p for one pass I got 59 bps with occasional false clicks, still a bit more than the TAPR hardware modem. But lock was solid and I never lost lock on all 5 passes. I reviewed my notes from earlier passes and see that those high throughput passes were when my noise level was low, usually 3 v p-p, and occasionally a bit lower.

If a user was to leave this program running all day, these false clicks would eventually move the frequency far. But getting set up a few minutes before a pass there is no problem. You have to manually find the lock anyway. If a user has beams the 1 v p-p would be fine, and there would be no noise induced false clicks unless there was a high noise level. Even at it's worse, there was never any mic click "run away".

If users want to have the tightest mic click lock possible that will follow the doppler down until the signal disappears into the noise, I suggest they adjust their FSK p-p to a setting between 1 and 1.2 v p-p for a setting that will not give excessive false mic clicks. This will be determined by their noise floor which, as I have seen, varies even at 70 cm. I will keep mine at 1.1 as I now have lock that is a bit better than my TAPR hardware modem, and throughput that is equal or better.

Your modem does not "catch up" when tuning goes out like the TAPR PSK modem, but your programs holds onto lock better, so there is no need to "catch up". I suspect this may give you a bit better throughput as your program keeps on printing, while the TAPR PSK modem stops printing during those "catch-up" periods. Subjectively, I feel your program prints over a bit wider tuning range, but I can not quantify that. It is just that it seems easier to get your program locked than it is with the TAPR PSK modem.

Perhaps you could offer the version that needed a decoded signal to mic click (psk93x1a.obj) in case someone has a high noise QTH like I had in Chicago and New York. Ignition noise was a constant background, and line noise from neon signs was always bad. I'll bet a 1 v p-p setting would click like crazy there. But I suspect most hams would do what I did in that environment and just QRT. Unfortunately psk931xa is more difficult to tune and lock is lost easier.

So, unless you have some other beta version to test, this will be the end of my beta testing of psk93x1b. In my opinion it is as good as, if not better, than my TAPR PSK modem. It has my stamp of approval.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 203. Up and Running and Impressed!!!!!!

From: dlamont@central.nz (Dave Lamont)  
Date: Sun, 23 Jul 1995 23:57:12 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507232357.LAA18149@central.co.nz>  
Rendered body type: text/plain

Apart from a Pwr|Vol pot that was broken and had no mounting hardware the kit went together perfectly.

Finished the build, pre tested, and 1 week later have verified and had contacts on all available modes.

By comparison with my ex satellite gateway equipemt the performance of the DSP93 suffers somewhat when downloading UO-22 by quite a margin. ????????.. EVERY OTHER FUNCTION EXCELS.

Congrats to TAPR and team.. It was really worth the wait.

Starting today on a wire wrap TNC2 to fit in the case and looking at the DSP93 schematics to see if I can multiplex

the RS232 requirements

73 Dave ZL2AMD  
Kind regards  
Dave

Amateur Packet Radio: z12amd@z12amd.#40.nz1.oc  
Internet: dlamont@central.co.nz  
Fax: 64-6-843-2953

---

## 204. Re: [DSP-93:1157] Yaesu Beta test report #12

From: fperkins@onramp.net  
Date: Sun, 23 Jul 1995 19:03:49 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507240003.TAA11304@mailhost.onramp.net>  
Rendered body type: text/plain

Thanks for all your testing efforts. You have convinced me to put out both strong-signal/high-noise and weak-signal/low-noise versions. I will do this soon and will also cook up the equivalents for the Kenwood/ICOM.

You are the first person I am aware of that has tested with both beams and fixed antennas. The fixed antennas are interesting stuff for field day, vacations, DXpeditions, etc.

Do you plan to go to Orlando for AMSAT or DFW for the ARRL/TAPR DCC conference(s) this Fall?

73 Frank WB5IPM

---

## 205. Re: [DSP-93:1158] Up and Running and Impressed!!!!!!

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 23 Jul 1995 21:01:06 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac38aefbf3f7@[204.96.0.102]>  
Rendered body type: text/plain

Dave ZL2AMD,

>

>By comparison with my ex satellite gateway equipemt the  
>performance of the DSP93 suffers somewhat when downloading  
>UO-22 by quite a margin. ????????.. EVERY OTHER FUNCTION  
>EXCELS.

Did you try all three FSK modems in the EPROM. You may get different results on UO-22 with each modem.

Ron W5RKN

also:  
rparsons@bga.com

---

## 206. Re: [DSP-93:1146] Software for HF modems

From: w6shp@amsat.org (Howard Sodja)  
Date: Sun, 23 Jul 1995 21:57:06 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507240456.VAA02059@hopf.dnai.com>  
Rendered body type: text/plain

Hello Ron,

>What software (on your computer) are people using with the HF DSP-93 modems?

I use D93WE initially on new programs to be sure everything is working properly, and then I use Procomm For DOS, because D93WE has none of the features I need for HF QSOs. I use the <ALT># macro keys for short text macros for often used QSO strings (Name is ..., QTH is ..., Rig is ..., etc.). I also like the split screen with a scroll back buffer to keep my text separate from what I am receiving, and to be able to pull back information that has scrolled off the screen, so you can look at it as you send your reply back.. Sending longer canned files (station details, QTH description, etc.) is also easy and gives my fingers a rest on those long rag chew QSOs.

>Are you loading the HF modem program outside of this software?



>How are you loading the HF program?

I use the pull-down menu with D93WE. I could use more program to load lines though, as I have all the available pull-down slots filled with programs now.

In Procomm for DOS I initially load an <ALT># macro file that runs BAT files for my HF programs which changes to the DSP directory to load the DSP program with DSPLOAD, and then returns to the Procomm directory, where I load my QSO text string <ALT># macro file discussed above.

I tried to upgrade to Procomm for Windows (V. 2.1) but found it does not run properly if you use the same IRQ on two com ports. I called the Procomm tech help and was told I would just have to rearrange my IRQs so each of my 4 com ports had its own IRQ. I have all but 2 IRQs used, and the unused ones are not available on any of my cards. So I uninstalled Procomm for Windows and went back to DOS, running it in a window with a PIF file.

I am not really happy with Procomm, as I used to use Lan-Link, which is more tailored for ham QSO use. But my attempts to use it with the DSP-93 have not been successful, so I gave up. I wish D93WE would add the above features to make HF keyboard to keyboard QSOs easy.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

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## 207. Error in AIO A/D [1 of 5]

From: gobier02@sarenet.es (Jabi Aguirre)  
Date: Tue, 24 Jul 1990 09:15:16 +0200  
To: dsp-93@tapr.org  
Message-ID: <9507240712.AA07187@sarenet.es >  
Rendered body type: text/plain

In the AIO= A/D Section [1 of 5], REV. 02/08/95,  
Is correct the polarity of U209A, pin 4= +5 V ALG and the pin 8=-5V ALG ?.  
In my DSP-93 I have inverted voltage ...  
73, de Jabi, EA2ARU.

Jabi Aguirre, EA2ARU  
gobier02@sarenet.es

---

## 208. Re: [DSP-93:1162] Error in AIO A/D [1 of 5]

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 24 Jul 1995 08:23:14 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac394f068e1d@[204.96.0.108]>  
Rendered body type: text/plain

>In the AIO= A/D Section [1 of 5], REV. 02/08/95,  
> Is correct the polarity of U209A, pin 4= +5 V ALG and the pin 8=-5V ALG ?.  
>In my DSP-93 I have inverted voltage ...  
>73, de Jabi, EA2ARU.  
>  
> Jabi Aguirre, EA2ARU  
> gobier02@sarenet.es

Mine too, Looks like you found an error in the schematic. Thanks.

Ron W5RKN

also:  
rparsons@bga.com

---

## 209. Re: [DSP-93:1127] TNC for the DSP-93

From: bstrick@dallas.net (Bob Stricklin)  
Date: Mon, 24 Jul 1995 08:49:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <9507241349.AA29240@dns>  
Rendered body type: text/plain

Gynn,

I like your TNC idea.

The mounting holes on the DSP-93 are .125" in from the corners. The hole size is .140" before plating.

You should just match the 20 pin modem connector for interface on the TNC2. The DSP-93 is only currently using 5 of these pins. You can refer to past mail posted about this interface or the DSP-93 manual. I think you have a unit. Later code may use other pins so I would go for the TNC2 standard. Makes your unit more versatile also.

Power will be a problem. The wall plug on the DSP-93 is running close to the limit. Better plan on your own power source. This will also reduce noise coupling into the DSP-93.

I would prefer to see the TNC in its own box. Also to reduce noise and to make it more versatile. If it could just have a second serial port and the required code to allow communications with the DSP-93 it would be a good choice for a DSP-93 owner. I know the box adds to the cost, but making new front and back covers is not cheap either.

I know your primary concern has to be with your customer but if you can accommodate the DSP-93 I think you will find some interest. After all if you make the proposed schedule you will be the first one with a TNC that is designed to interface with the DSP-93 and the number of people with the kit is growing.

Good luck with your project.

Bob Stricklin, N5BRG

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## 210. Re: [DSP-93:1159] Re: Yaesu Beta test report #12

From: w6shp@amsat.org (Howard Sodja)  
Date: Mon, 24 Jul 1995 09:02:42 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507241602.JAA29619@hopf.dnai.com>  
Rendered body type: text/plain

>You are the first person I am aware of that has tested with both beams  
>and fixed antennas. The fixed antennas are interesting stuff for field  
>day, vacations, DXpeditions, etc.

I like them because I can save wear and tear on my rotors when I work psk. Also when my beams are down for repairs I can stay in touch on the Microsats. I only wish it was practical on the 9600 baud birds. But you need a better signal/noise ratio, so throughput is too low. It was all I could do to just keep my directory up to date with the Lindys.

>Do you plan to go to Orlando for AMSAT or DFW for the ARRL/TAPR DCC  
>conference(s) this Fall?  
>

No, I won't be making these events.

Thanks for all your work. I now no longer need my PK-232 for my TAPR PSK and G3RUH modems, so I am ready for that internal TNC pcb. I am glad I initially wires in my DSP-93 so I could easily change between modems for comparisons. Now I know the DSP-93 is better!

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

## 211. Re: [DSP-93:1127] TNC for the DSP-93

From: Carol Byers <crlbyers@garlic.com>  
Date: Mon, 24 Jul 1995 10:08:43 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950724100436.15362B-100000@garlic.com>  
Rendered body type: text/plain

Hi Gwyn,

This is an interesting idea. Also, I have your NB-96 with the tiny TNC. The unit has an external 20 pin connector. Can you tell me how to interface it to the DSP-93. Really like the front panel selector switch, and would like to use the AUX position, but when I got the unit there was no documentation.

## 212. Proprietary Source

From: n7ryw@teleport.com (William Roth)  
Date: Mon, 24 Jul 1995 13:24:50 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507242024.NAA20291@desiree.teleport.com>  
Rendered body type: text/plain

A few days ago, I sent the following to the group:

I have seen that the source code for some of the modems (the most useful ones, really) and for the Windows Interface are not available. I read that this was to be an "Open" system, so why is the source not available? Seems rather at odds with the intent of the unit, and no better than the DSP-12, which is at least complete (no external tnc needed), but also without source for the important modems. I would like to be able to write some enhancements, but without source I would have to re-create the whole thing. Any suggestions?

I have not had any replies, but I failed to repeat that I am not on the list, so please e-mail replies to me at:

n7ryw@teleport.com

These are the only things left to resolve before I purchase one of these units. Any information would be helpful.  
Thanks, Bill

>From Bill, n7ryw@teleport.com  
>Amsat NA Life Member #2109

---

## 213. Re: [DSP-93:1167] Proprietary Source

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 25 Jul 1995 01:27:29 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507250137.VAA08629@camel.campbell.edu>  
Rendered body type: text/plain

I have sent Bill a copy of Greg's response to this question.

>A few days ago, I sent the following to the group:  
>  
>I have seen that the source code for some of the modems (the most useful  
>ones, really) and for the Windows Interface are not available. I read that  
>this was to be an "Open" system, so why is the source not available? Seems  
>rather at odds with the intent of the unit, and no better than the DSP-12,  
>which is at least complete (no external tnc needed), but also without source  
>for the important modems. I would like to be able to write some  
>enhancements, but without source I would have to re-create the whole thing.  
>Any suggestions?  
>  
>I have not had any replies, but I failed to repeat that I am not on the  
>list, so please e-mail replies to me at:  
>  
>n7ryw@teleport.com  
>  
>These are the only things left to resolve before I purchase one of these  
>units. Any information would be helpful.  
>Thanks, Bill  
>  
>>From Bill, n7ryw@teleport.com  
>>Amsat NA Life Member #2109  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 214. PacComm TNC

From: dlamont@central.nz (Dave Lamont)  
Date: Tue, 25 Jul 1995 04:26:28 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507250426.QAA04599@central.co.nz>  
Rendered body type: text/plain

I too would be an immediate starter for the PacComm  
tnc as suggested... Save me wire wrapping one hi hi

RON.... Yes I tried all the FSK programs on the U0-22  
download. Thanks for the response.. I am going  
to try some level and tuning variations outside  
of the WISP/KCTT control.

73 Dave Lamont        ZL2AMD  
Kind regards  
Dave

Amateur Packet Radio: z12amd@z12amd.#40.nzl.oc  
Internet: dlamont@central.co.nz  
Fax: 64-6-843-2953

---

## 215. Re: [DSP-93:1167] Proprietary Source

From: n7ryw@teleport.com (William Roth)  
Date: Tue, 25 Jul 1995 00:59:41 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507250759.AAA11269@desiree.teleport.com>  
Rendered body type: text/plain

A while ago I wrote with some concerns about availability of source code for  
modems.

I had forgotten to include my mail address for replies, for which I  
apologise. Nobody likes to respond to ghosts! Thankfully, Ron W5RKN kept a  
copy of the response and forwarded it to me.  
Thank You, Ron!

While the response I got answered the questions, they also brought up some  
concerns, not as a buyer but as an active Amsat member. Here's the responses  
and my concerns. I would like very much to hear all opinions on this.

>I guess we have two definitions of 'OPEN' going here.

Yes, I think so! Read on...

>Open to me denotes that the system provides all the necessary tools in order  
>to do development.

I agree that tools are available. I disagree that it is open. Many closed  
systems also have development tools available, and even source. The Mac is a  
prime example. Having tools available does not qualify the unit as being  
open. Open to me is just that, Open. Nothing proprietary, nothing held back.  
Even my C compilers have source available for all of the libraries. I  
wouldn't buy them if there wasn't source, and neither would most others. And  
these are not even considered to be "open"!

>Basic examples of the modems that have not been released are available (i.e.  
>9600 baud FSK is available, but not the souped up one).  
>So, you wouldn't have to start from square on any one  
>modulation scheme.

Right, I would not be re-inventing the wheel, just the rim. This is in  
itself a rather minor point, But...

>The reason for not  
>allowing some of the modem sources to be fully available is in an attempt  
>to protect OEM sales. If we made everything fully available, then there  
>would be no reason for a commercial interest to OEM the device's software  
>or hardware.  
>This decision made by both AMSAT and TAPR as part of the joint  
>process. TAPR and AMSAT see potential commercial sales of the unit (either  
>as OEM hardware or code development) as the prime revenue generator of the  
>project. While we make some profit from amateur sales, OEM sales is where  
>both organizations look to recoup and eventually make a profit on the  
>development. This profit then can be diverted back into projects like P3D  
>or various TAPR projects.

My concern levels just multiplied. Here is what I have, from the Tapr www  
DSP-93 page...

"In July 1988, TAPR and AMSAT entered into the Joint DSP Program, in order  
to fund the development of an eventual DSP unit for amateur usage."

Note especially the "for amateur usage"! Note also...

"Since the DSP-93 is an open architecture,"

OEM sales are not mentioned anywhere as a purpose for this project. Indeed, the ONLY purpose mentioned is Amateur. Please note that my concern is definitely not the OEM sales IDEA, it is the holding back from the membership in preference to those sales. I am all for using our resources to expand into commercial areas as a way of funding Amsat, but we have to be very careful not to exclude our members in favor of the commercial venture. There is a balance point, and that point is where the members are held to a lower priority than any others. When it is not fully available to the members (who paid for it and worked for it and continue to provide the support for it) I am \*very\* concerned. I am not currently a member of Tapr so I won't comment on that organisation, but I know that Amsat is supposed to be first and foremost its membership. Also, since it took this much digging to get this OEM info, I have to wonder, what other information is not in view? These kinds of things need to be stated up front, especially since we are a non-profit organisation. We owe it to our members to be completely forthcoming about all aspects of our projects, especially in such a major area as the projects' overall purpose.

>Tom and Ron have been very good in updating the interface programs and I  
>don't see a need to release the source.  
>If you felt strongly about the  
>addition of something in the interface programs I am sure we could talk  
>with Tom and Ron about it

I thought that this project was for US to be able to experiment, especially with writing the software. That is why I got interested in this project, for its experimental value. Am I participating in the experiment by waiting for someone else to write (or change) the software?

Be aware that if I do develop some sort of Windows code for the unit, it will be available (with source) for others to improve upon. Anyone here use MSVC 2.2?

>and possibly bring you into the development group  
>under an NDA. As an analogy, I don't think I ever saw Instant Track  
>of WISP available as source.

My concern meter just went up x100. An NDA for an "Open" system??? One funded by donations from the membership, with access restricted from that same membership? Sorry, but my code will be made available to all who want it, since it is for an open system. If I want to write code under an NDA, I will go to work for MS and get paid for it.  
An analogy to Wisp or IT is ludicrous. They were NEVER represented as open in any way.

Also, if some source code is not available, then why is the other? I read also on the www page...

"(\* - indicates source is available for amateur non-commercial use.)"

Why, then, isn't the source for the 9600 full duplex, the APT, Digital Oscilloscope, and two interfaces made available with the same caveat? By the way, this is not just a couple, but five proprietary code sets.

If this system is actually intended (and protected) for OEM sales, then just say so, and leave out the "open" statement. However, I would rather see making the source available to amateurs "for amateur non-commercial use". After all, any OEM would have much more specific software (and probably hardware) designed for them, not something set up for general amateur use. Also remember that limiting source does not prevent use. Many a byte has been disassembled and reused. Not having source available will not stop someone who is intent on stealing the code. This has been proven time and again. This is why copy protection has fallen out, and why source is included in compiler libraries.

Let's take a lesson from IBM. They created an open system. They held back on the BIOS, but everyone found a way around that anyway (and made a LOT of money doing it!). Look at where IBM is at now, and compare that with the proprietary manufacturers. IBM, too, found out the hard way (via the MCA bus) about the mistake of proprietary pieces and parts. I would much rather see an Amateur Radio Standard established for dsp uses, than just another protected system in the mix. We can take the initiative here, if we're willing to.

In closing, note that this has not stopped me from purchasing the unit. I am planning on doing so, I just have some opinions on how some things are being handled. Come to think of it, since these decisions were made a long time ago, maybe it is time to review these policies, since much in the computer world has changed since. The whole computer industry is far more open than

it was in 1988 when this agreement was signed. Maybe we should be keeping up with the times?

As before, please send all responses to n7ryw@teleport.com as I'm not on the list yet (just sent the request).

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

## 216. Re: [DSP-93:1169] PacComm TNC

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 25 Jul 1995 13:06:02 +0000  
To: dsp-93@tapr.org  
Message-ID: <199507251316.JAA14252@camel.campbell.edu>  
Rendered body type: text/plain

Dave,

You might try carefully optimizing the receive resistor pot during a U0-22 pass, and watch the "Wisp XX%" efficiency indicator. I have found this to work reasonably well to fine-tune the receive side.

Using that and the DCD LED should help.

>I too would be an immediate starter for the PacComm  
>tnc as suggested... Save me wire wrapping one hi hi  
>  
>RON.... Yes I tried all the FSK programs on the U0-22  
> download. Thanks for the response.. I am going  
> to try some level and tuning variations outside  
> of the WISP/KCTT control.  
>  
>73 Dave Lamont ZL2AMD  
>Kind regards  
>Dave  
> Amateur Packet Radio: zl2amd@zl2amd.#40.nzl.oc  
> Internet: dlamont@central.co.nz  
> Fax: 64-6-843-2953  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 217. Re: [DSP-93:1169] PacComm TNC

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 25 Jul 1995 09:10:37 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac3aa7966919@[204.181.160.94]>  
Rendered body type: text/plain

Dave Lamont ZL2AMD ,

>RON.... Yes I tried all the FSK programs on the U0-22  
> download. Thanks for the response.. I am going  
> to try some level and tuning variations outside  
> of the WISP/KCTT control.  
>  
>73 Dave Lamont ZL2AMD

Also, if you have a scope, look at the voltage on TP1. It should not exceed 1V p-p. Often less is better than more. Don't overdrive the DSP-93 on the FSK modems.

Ron W5RKN

also:  
rparsons@bga.com

---

## 218. (no subject)

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 25 Jul 1995 14:38:22 +0000  
To: dsp-93@tapr.org, n7ryw@teleport.com  
Message-ID: <199507251449.KAA14530@camel.campbell.edu>  
Rendered body type: text/plain

I also sent you a copy of Greg's response. Read on....

>A while ago I wrote with some concerns about availability of source code for  
>modems.  
>I had forgotten to include my mail address for replies, for which I  
>apologise. Nobody likes to respond to ghosts! Thankfully, Ron W5RKN kept a  
>copy of the response and forwarded it to me.  
>Thank You, Ron!  
>  
>While the response I got answered the questions, they also brought up some  
>concerns, not as a buyer but as an active Amsat member. Here's the responses  
>and my concerns. I would like very much to hear all opinions on this.  
>

Okay, here we go.....

I think it should be viewed that TAPR is selling the DSP-93. It is not selling the software per say, but rather the hardware. If you want a set of EPROMs without any of the modem or test code in it, than I'm sure you can burn your own with the .obj files that are available for the EPROMS, or someone else will burn you some.

I think you have a fundamental misunderstanding of what is for sale versus what is available. If someone writes a piece of code and chooses NOT to release the source, that is the author's prerogative. Now, if the author chooses NOT to release the source because he feels that it may be more beneficial to TAPR in the long run, then that again is his prerogative.

No one is saying that you can't write a spiffy 9600 bps full duplex satellite modem for the DSP-93, or a Windows interface to enable it to act like an oscilloscope or spectrum analyzer and then release the source code to everybody. I believe that the authors of the first versions of such code made a decision to donate the source to TAPR, much in the same way that the alpha and beta testers have donated and continue to donate their time and resources to the DSP-93 project. My feeling is that the decision to donate the source to TAPR, or maybe it would be better put, reserving the right to distribute the source code later if they so choose, IS in the best interest of TAPR.

The DSP-93 might have been put together as a kit, with no code whatsoever developed or released with the unit. Now, that is not very appealing to me, and I doubt that very many would have been sold. I can't write code (yet ;- ) ) so I am glad to have the functional versions of the code released.

I hope you buy a DSP-93 and write some great code for it....it is a neat little box with great versatility. I just feel that when you question the "open-ness" of the DSP-93, you are questioning the decision by the authors to donate their time and efforts in the form of source code that has been donated to TAPR. My bet is that this choice will directly benefit both TAPR and AMSAT by generating funds thru OEM sales to continue the development of such hardware in the future for amateur usage. I am a member of both AMSAT and TAPR. I think if you were a TAPR member and had been getting the TAPR rags for a while, you might understand that some of these ideas or philosophies are an inherent component of what TAPR is and how it pays for project development. You can be assured that membership dues are NOT what is funding project development.

You asked for opinions, and I have voiced mine. My view is that the words "open architecture" imply that the system is open for expansion, and is quite versatile. I don't recall seeing anywhere the notion or promise that "all source code for all modems or chips will be provided just for the asking".

(Yes, I know, my mailer needs a spell checker. Sorry for the misspellings and typos!)

Mark L. Hammond [KC4EBR]

---

## 219. TNC-NB96

From: paul@paccomm.com  
Date: Tue, 25 Jul 95 11:16:37 UTC  
To: taprdsp-93  
Message-ID: <1912@paccomm.com>  
Rendered body type: text/plain

Hello. Had a few DSP-93 users asking about using the TNC-NB96 TNC with the DSP unit.

The best way to do this is to use the AUX modem connector on the rear panel and the AUX position of the selector switch.

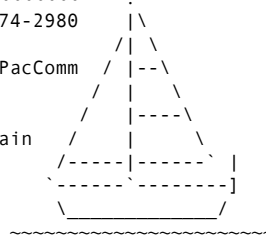
The pin-out of the 20 pin AUX connector is standard TAPR modem disconnect header. All you'll need to do is connect a ribbon cable from the MDH on the DSP-93 and run it to the AUX connector on the back of the TNC.

The TNC-NB96 was designed to switch between

1200Bd AFSK, 9600Bd DFM, PSK external modem  
and AUX (any modem you care to dream up).....

Hope that resolves some of the questions arising about this hook-up.....

~~~~~  
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980  
Fax:+1 (813) 872-8696  
Views expressed here are not necessarily those of PacComm  
Don't surf the net, SAIL it!  
Captain of S/V "Spindrift", Dunedin, FL.  
Tall rig (58'), Winged Keel (4' 2"), full batten main  
  
PacComm Packet Radio Systems  
4413 N. Hesperides St., Tampa, FL 33614-7618  
~~~~~



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## 220. MDH / TNC-NB96

From: paul@paccomm.com  
Date: Tue, 25 Jul 95 11:31:37 UTC  
To: taprdsp-93  
Message-ID: <1915@paccomm.com>  
Rendered body type: text/plain

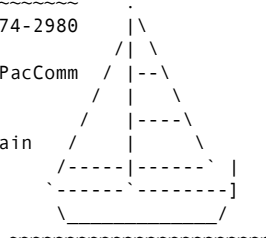
Ooops! Just double checked the pin-outs....  
The AUX header on the TNC-NB96 has the rows swapped. Namely:

1 & 2 are swapped, 3 & 4, etc.

So you cannot connect pin for pin. The DSP-93 uses only 5 of the signal pins, so this is not too arduous a wiring task.

If confused, the AUX connections are on the circuit diagram and pin 1 on PacComm products is always marked by a square solder pad (the rest are round).

~~~~~  
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980  
Fax:+1 (813) 872-8696  
Views expressed here are not necessarily those of PacComm  
Don't surf the net, SAIL it!  
Captain of S/V "Spindrift", Dunedin, FL.  
Tall rig (58'), Winged Keel (4' 2"), full batten main  
  
PacComm Packet Radio Systems  
4413 N. Hesperides St., Tampa, FL 33614-7618  
~~~~~



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## 221. Re: [DSP-93:1170] Re: Proprietary Source

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 25 Jul 1995 11:27:35 -0500  
To: dsp-93@tapr.org  
Cc: n7ryw@teleport.com (William Roth)  
Message-ID: <v02120d00ac3ac4a83d61@[204.96.0.77]>  
Rendered body type: text/plain

Bill,

I was going to let your latest remarks go unanswered, but your comments kept gnawing at me. This will, however, be my last public response.

>A while ago I wrote with some concerns about availability of source code for  
>modems.

...

>>I guess we have two definitions of 'OPEN' going here.  
>



>Yes, I think so! Read on...

I became interested in the DSP-93 project when I read the proceedings of a conference where the DSP-93 project was discussed. I had been using an AEA DSP-2232 and a friend had a DSP-12. I, too, wanted to write software for them but found the suppliers of both the DSP-2232 and the DSP-12 unforthcoming with programming information. I applied for, and was accepted, into the DSP-93 beta test team. I even paid good money for the "privilege". I found the unit to be "open" beyond "my" expectations. If I had a question, I just asked and an answer was provided. Yes, even the source of the assembler is provided if you pay the shareware fee.

If TAPR/AMSAT paid for the development of the software, and if it were paid for out of membership dues, members could argue that the source code should be made available, at least to members. But I was not paid a cent for all the code development I did. My Mac interface contains some proprietary (to me) objects which I do not have any intention of releasing publicly. If users have a need for an enhancement, I would certainly entertain providing that feature. I spent my own time, willingly, doing the development I did. My decision not to give away my proprietary code does not make the system any less open.

>In closing, note that this has not stopped me from purchasing the unit. I am  
>planning on doing so, ...

I welcome you to the community. I hope you will be as willing to share your efforts as many others have been. Now let's get back to the class of things known as "real" work. Discussing the definition of "open" is not a member of that class!

Ron W5RKN

also:  
rparsons@bga.com

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## 222. Heat

From: WayneH8117@aol.com  
Date: Wed, 26 Jul 1995 00:54:18 -0400  
To: dsp-93@tapr.org  
Message-ID: <950726004835\_123105031@aol.com>  
Rendered body type: text/plain

Hi,

I recently completed my kit and found reading the July mail that nothing is unique. My volume control had no hardware, and upon testing I learned it was also broken. I replaced it with Radio Shack # 271-215B and it fits and works fine. Everything seems to test OK, but the dreaded Heat-Stroke hit when I put the cover on. I am very pleased with the unit, but would appreciate any help or suggestions on the heat problem. It works fine without the cover, but will not continue running programs when covered.

73  
Wayne Henderson WA6YET  
WayneH8117@aol.com

---

## 223. Re: [DSP-93:1177] Heat

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 26 Jul 1995 07:15:31 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac3be1060d4d@[204.96.0.131]>  
Rendered body type: text/plain

>Hi,  
>

>I recently completed my kit and found reading the July mail that nothing is  
>unique. My volume control had no hardware, and upon testing I learned it was  
>also broken. I replaced it with Radio Shack # 271-215B and it fits and works  
>fine. Everything seems to test OK, but the dreaded Heat-Stroke hit when I put  
>the cover on. I am very pleased with the unit, but would appreciate any help  
>or suggestions on the heat problem. It works fine without the cover, but will  
>not continue running programs when covered.  
>

>73  
>Wayne Henderson WA6YET  
>WayneH8117@aol.com

You really need an "audio taper" volume control pot. The last time I looked, Radio Shack didn't have a 10k audio taper. Looks like TAPR had a supply problem with the pot they supplied. There have been a lot of comments on that.

On the heat stroke, check these things and report back here.

1. Measure the AC input voltage.
2. Measure the DC input voltage to the two regulators with heat sinks.
3. Give me the data asked for in the section "Power Supply Balancing" in the Build Update. That paragraph is reproduced below:

"After both boards have been completed and assembled together, and the "DSP-93 Final Check" on page 25 of the Assembly Manual has been completed, perform a quick check of the balance of the two power supplies. Both +5V supplies on the two boards contribute to the +5V digital power planes. If the two regulators (VR100 and VR201) have significantly different regulating voltages, one of the regulators will carry more than its share of the load. The voltage across the two 0.22 ohm resistors (R107 and R210) should be APPROXIMATELY equal (within a factor of two). Somewhere in the range of 50-90 mV is about right. Should the balance be way off (the voltage across one of them zero, say), please post a message on the dsp-93 mail list and we will work out a solution."

Ron W5RKN

also:  
rparsons@bga.com

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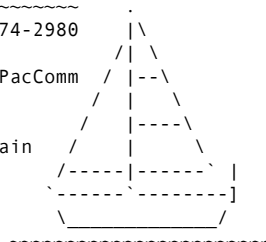
## 224. Re: [DSP-93:1174] TNC-NB96

From: Carol Byers <crbbyers@garlic.com>  
Date: Wed, 26 Jul 1995 09:00:07 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950726085913.8599A-100000@garlic.com>  
Rendered body type: text/plain

Thanks Paul, I'll try it this weekend and let you know how it works.

On Tue, 25 Jul 1995 paul@paccomm.com wrote:

```
>
> Hello. Had a few DSP-93 users asking about using the TNC-NB96
> TNC with the DSP unit.
>
> The best way to do this is to use the AUX modem connector
> on the rear panel and the AUX position of the selector
> switch.
>
> The pin-out of the 20 pin AUX connector is standard TAPR
> modem disconnect header. All you'll need to do is connect
> a ribbon cable from the MDH on the DSP-93 and run it to
> the AUX connector on the back of the TNC.
>
> The TNC-NB96 was designed to switch between
>
> 1200Bd AFSK, 9600Bd DFM, PSK external modem
> and AUX (any modem you care to dream up).....
>
> Hope that resolves some of the questions arising about this
> hook-up.....
>
> ~~~~~
> Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980
> Fax:+1 (813) 872-8696
> Views expressed here are not necessarily those of PacComm
> Don't surf the net, SAIL it!
> Captain of S/V "Spindrift", Dunedin, FL.
> Tall rig (58'), Winged Keel (4' 2"), full batten main
>
> PacComm Packet Radio Systems
> 4413 N. Hesperides St., Tampa, FL 33614-7618
>
>
>
```



## 225. Re: [DSP-93:1176] Re: Proprietary Source

From: Roy Welch <rdw@crl.com>  
Date: Tue, 25 Jul 1995 16:20:25 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950725161136.22051A-100000@crl8.crl.com>  
Rendered body type: text/plain

I agree with Ron on this subject. An open architecture refers to the ability of others to use a specific product in the market and interface it with items they might wish to design themselves. For example, the specifications of the PACSAT protocol was published for all to see so that if we wished to design our own ground station software we could do so. That is why we are able to have the current WISP program we like so well. The source code for the original PB/PG programs and the spacecraft however is not public. Neither is the source code for WISP.

73, Roy

---

## 226. TNCs and DSP-93

From: paul@paccomm.com  
Date: Wed, 26 Jul 95 14:00:48 UTC  
To: taprdsp-93  
Message-ID: <2043@paccomm.com>  
Rendered body type: text/plain

Page 35 of the DSP-93 manual needs one or two little additions.

First: Need to add that tracks between pins 1 & 2 and 17 & 18 need to be cut to free up the TNC from the on-board modem.

Secondly: Change "TAPR manual and MFJ-1270" to read "TAPR manual, MFJ manuals and PacComm manuals" ..... :-)

Finally, for those attaching to the AUX MDH on the back of the TNC-NB96. You need to break open 1-2 and 17-18 on that header too! The board designer must have gone a little nuts that day and left the cross jumps in ! Otherwise the wiring is identical to that on p35 of the DSP-93 assembly book....

Make a cable with the following connections:

| MDH | signal | DB-25 (male) |
|-----|--------|--------------|
| 1   | _DCD_  | 1            |
| 5   | _PTT_  | 3            |
| 15  | GND    | 8            |
| 17  | RXD    | 9            |
| 19  | TXD    | 10           |

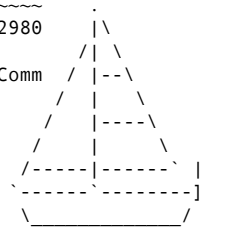
By the way, looking into the AUX connector on the TNC-NB96, the pin 1 is in the bottom left corner, so looking into it it looks the same as looking down on the J5 MDH in a "normal" TNC.

Hope that gets some of the gang going a little more easily.....

Authors, please amend the page a little. It's the TNC manufacturers that are getting the calls and not TAPR!!!!

oh, one last thing.....make sure that cable is screened !!!

~~~~~  
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980  
Fax:+1 (813) 872-8696  
Views expressed here are not necessarily those of PacComm  
Don't surf the net, SAIL it!  
Captain of S/V "Spindrift", Dunedin, FL.  
Tall rig (58'), Winged Keel (4' 2"), full batten main  
  
PacComm Packet Radio Systems  
4413 N. Hesperides St., Tampa, FL 33614-7618  
~~~~~



---

## 227. Re: [DSP-93:1181] TNCs and DSP-93

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 26 Jul 1995 14:45:42 -0400

To: dsp-93@tapr.org  
Message-ID: <199507261845.OAA00375@camel.campbell.edu>  
Rendered body type: text/plain

Paul,

On my MFJ-1270C, I did not have to cut any traces. I left the shorting trace between pins 1 and 2. On this particular unit, it allows the DCD light on the tnc to follow the DCD light on the DSP-93. There was no trace between 17 and 18 from the factory. Must have been a jumper I removed...

So, your additions might be "TNC specific".

>Page 35 of the DSP-93 manual needs one or two little additions.

>

>First: Need to add that tracks between pins 1 & 2 and 17 & 18  
>need to be cut to free up the TNC from the on-board modem.

>

>Secondly: Change "TAPR manual and MFJ-1270" to read "TAPR manual,  
>MFJ manuals and PacComm manuals" ..... :-)

>

>

>Finally, for those attaching to the AUX MDH on the back of the  
>TNC-NB96. You need to break open 1-2 and 17-18 on that header  
>too! The board designer must have gone a little nuts that day  
>and left the cross jumps in ! Otherwise the wiring is  
>identical to that on p35 of the DSP-93 assembly book....

>

>Make a cable with the following connections:

>

| >MDH | signal | DB-25 (male) |
|------|--------|--------------|
| >1   | _DCD_  | 1            |
| >5   | _PTT_  | 3            |
| >15  | GND    | 8            |
| >17  | RXD    | 9            |
| >19  | TXD    | 10           |

>

>By the way, looking into the AUX connector on the TNC-NB96, the  
>pin 1 is in the bottom left corner, so looking into it it  
>looks the same as looking down on the J5 MDH in a "normal"  
>TNC.

>

>Hope that gets some of the gang going a little more easily.....

>

>Authors, please amend the page a little. It's the TNC  
>manufacturers that are getting the calls and not TAPR!!!!

>

>oh, one last thing.....make sure that cable is screened !!!

>

>~~~~~  
>Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980

>Fax:+1 (813) 872-8696

>Views expressed here are not necessarily those of PacComm

>Don't surf the net, SAIL it!

>Captain of S/V "Spindrift", Dunedin, FL.

>Tall rig (58'), Winged Keel (4' 2"), full batten main

>

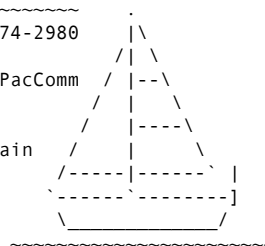
>PacComm Packet Radio Systems

>4413 N. Hesperides St., Tampa, FL 33614-7618

>

>

-----  
Mark L. Hammond, Ph. D. (KC4EBR)  
Campbell University



## 228. Re: [DSP-93:1181] TNCs and DSP-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 26 Jul 1995 15:33:12 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac3c51d48e28@[204.96.0.78]>  
Rendered body type: text/plain

Paul,

>Page 35 of the DSP-93 manual needs one or two little additions.

>

>First: Need to add that tracks between pins 1 & 2 and 17 & 18  
>need to be cut to free up the TNC from the on-board modem.

Thanks for you comments. Nothing is "standard", I guess. In contrast to what Mark reported on the MFJ-1270C, my MFJ 1270B did not have a trace between pins 1 & 2 on J4 (Modem Disconnect Header). It came with slip-on jumpers between 1-2, 11-12, 13-14, 17-18. There were traces on the PCB from 3-4, 5-6-10-9, and 19-20 (the latter trace had to be cut).

I guess the "rule" is to check whatever TNC you are connecting to and make sure the end result looks like the diagram on the bottom of page 35 of the Assembly Manual.

Thanks for your comments on shielding the cable. This was in another document but certainly needs repeating in the Assembly Manual.

I'll add your comments on interfacing to the TNC-NB96 to the Build Update.

Ron

Ron W5RKN

also:  
rparsons@bga.com

---

## 229. Re: [DSP-93:1178] Re: Heat

From: WayneH8117@aol.com  
Date: Thu, 27 Jul 1995 00:09:27 -0400  
To: dsp-93@tapr.org  
Message-ID: <950727000925\_41685831@aol.com>  
Rendered body type: text/plain

Ron,

Thanks for the reply. I measured the items you requested and the results are:  
1. 9.47 vac 2. 10.1 vdc at the analog reg. 9.61 vdc at the digital reg. 3. The results of the .2 ohm are 51.1 mv on the analog supply and 48.1 mv on the digital .2 ohm.

The pot I got at Radio Shack is an audio taper. Thats why I gave the stock number, in case someone might need one.

Many thanks for the support.

73  
Wayne Henderson WA6YET

---

## 230. VR100 Heat Sink

From: "Robert A. WHEELER" <102006.3004@compuserve.com>  
Date: 27 Jul 95 00:23:30 EDT  
To: DSP-93 SIG <DSP-93@tapr.org>  
Message-ID: <950727042330\_102006.3004\_EHT190-1@CompuServe.COM>  
Rendered body type: text/plain

What do you do with the heat sink legs, they rest on top of the Cap. C-117 if it is installed per the instructions? Can they be bent so that they are parallel to the edge of the board?  
Ref. pg.13 of DSP-93 Assembly Manual (5/01/95). Thanks for the help to come.  
73 Bob, wa4opv

---

## 231. Re: DSP software dev. topic

From: "bba" <bba@ne.dk>  
Date: Thu, 27 Jul 95 09:33:15 dst  
To: dsp-93@tapr.org  
Message-ID: <9506278068.AA806862795@smtplink.ne.dk>  
Rendered body type: text/plain

In message [DSP-93:1037] Johan Forrer, KC7WW, writes:

> Hi all DSP-93 software developers,  
>  
...  
> Presently one need to use a disconnect header on a TNC to interface  
> the DSP-93. It would be really nice if the DSP-93 could take care of

> the HDLC and KISS interface in software and then let the PC and DSP  
> talk to each other directly, i.e., it will be the DSP-93, the PC,  
> and NOS (or other KISS program if you wish). ....

I have previously asked for exactly this kind of solution, so I should  
be the first to offer my assistance.

> ...  
> Otherwise, any feedback, suggestions, or flames, are welcome. Also -  
> if you have experience in this regard, let us hear from you too.

I do not, however, have any DSP programming experience (yet) but...

> Offers of help/assistance would be welcome.

...if I can be of any assistance, e.g. as beta tester, count me in.

73 de Bent/OZ6BL

---

## 232. Re: [DSP-93:1185] VR100 Heat Sink

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 27 Jul 1995 07:15:10 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac3d335789fa@[204.96.0.44]>  
Rendered body type: text/plain

>What do you do with the heat sink legs, they rest on top of the Cap. C-117  
>if it  
>is installed per the instructions? Can they be bent so that they are parallel  
>to the edge of the board?  
>Ref. pg.13 of DSP-93 Assembly Manual (5/01/95). Thanks for the help to come.  
>73 Bob, wa4opv

I'm not sure exactly of the configuration of your heat sink but the "legs"  
of the heat sink should be pointing away from the edge of the board. It  
sounds like you installed them to point inward.

Ron W5RKN

also:  
rparsons@bga.com

---

## 233. Re: [DSP-93:1186] Re: DSP software dev. topic

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 27 Jul 1995 07:26:34 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac3d3562050d@[204.96.0.77]>  
Rendered body type: text/plain

> In message [DSP-93:1037] Johan Forrer, KC7WW, writes:  
>  
> > Hi all DSP-93 software developers,  
> >  
> ...  
>  
> > Presently one need to use a disconnect header on a TNC to interface  
> > the DSP-93. It would be really nice if the DSP-93 could take care of  
> > the HDLC and KISS interface in software and then let the PC and DSP  
> > talk to each other directly, i.e., it will be the DSP-93, the PC,  
> > and NOS (or other KISS program if you wish). ....  
>  
> I have previously asked for exactly this kind of solution, so I should  
> be the first to offer my assistance.  
>  
> > ...  
> > Otherwise, any feedback, suggestions, or flames, are welcome. Also -  
> > if you have experience in this regard, let us hear from you too.  
>  
> I do not, however, have any DSP programming experience (yet) but...  
>  
> > Offers of help/assistance would be welcome.  
>  
> ...if I can be of any assistance, e.g. as beta tester, count me in.  
>  
> 73 de Bent/OZ6BL

There are several solutions possible. Two hardware solutions are in the

design phase -- PacComm and TAPR have projects to produce a hardware TNC that would interface to the DSP-93 "in the case".

Some of the DSP-93 modems have "TNC" functions already in their software. Others do not. The faster modems, e.g., 9600 bps, probably do not have enough time available between samples to do it in software. The slower ones, e.g. 1200 bps, might.

Here's an opportunity to get some "DSP programming experience".

Look at the source of the various modems and learn from them.

Ron W5RKN

also:  
rparsons@bga.com

---

## 234. Re: [DSP-93:1184] Re: Heat

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 27 Jul 1995 10:01:37 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d03ac3d5759ffc2@[204.96.0.77]>  
Rendered body type: text/plain

>Ron,  
>  
>Thanks for the reply. I measured the items you requested and the results  
>are:  
>1. 9.47 vac 2. 10.1 vdc at the analog reg. 9.61 vdc at the digital reg. 3.  
>The results of the .2 ohm are 51.1 mv on the analog supply and 48.1 mv on the  
>digital .2 ohm.  
>  
>The pot I got at Radio Shack is an audio taper. Thats why I gave the stock  
>number, in case someone might need one.  
>  
>Many thanks for the support.  
>  
>73  
>Wayne Henderson WA6YET

"Unfortunately", nothing sounds wrong with those values. Your DC input is a little higher than mine (9.58, 9.52). The voltage drop across the .22 ohm resistors show the two power supplies are well balanced.

I know it is hard to probe while the case is on, but can you detect a change the +5V supply when the unit "heat-strokes" out?

Being conversative, I added a second heat-sink to each regulator and used heat-sink compound to help conduct the heat. But I never had the problem before or after doing that.

Ron W5RKN

also:  
rparsons@bga.com

---

## 235. Build Update 27 July 1995

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 27 Jul 1995 10:01:42 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d04ac3d59ea9a38@[204.96.0.77]>  
Rendered body type: text/plain

DSP-93 Build Update  
June '95 Production

Updated: 27 July 1995

We will issue updates to the build process as the situation warrants. The latest update will be posted to the dsp-93 mailing list and will be available on ftp.tapr.org in the directory /tapr/dsp93/updates.

-----  
Be sure to visit the TAPR Web pages at <http://www.tapr.org/tapr/>  
-----

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94). These archives are also available on the TAPR Web pages.

----- HERE'S YOUR CHANCE TO HELP THE GROUP -----

As you interface your DSP-93 to your radio, etc., how about writing up your experiences, procedures, problems, etc. Post your results and we'll collect them.

What additional would you like to see in the Operations Manual? Let me know and I'll sign you up for a section or two.

-----

-----

July 27th, 1995 Update Section

Interfacing the DSP-93 to your TNC  
-----

The diagram on the bottom of page 35 of the Assembly Manual should be considered as the desired end result of your connections between the DSP-93 and the TNC Modem Disconnect Header. While most TNC Modem Disconnect Headers are similar, they are not all exactly alike. There may be traces on the PCB shorting pins together and there may be slip-on shorting jumpers on the top of the Header. I hope no manufacturer put shorting traces on the top of the PCB under the header.

Be sure to shield the cable between the DSP-93 Interface Port connector (DB-25) and your TNC. Connect to Ground (pin 15) on the Modem Disconnect Header.

I will begin collecting information on various TNC Modem Disconnect Headers. If you are using a TNC which is not on the list below, please send me the relevant data.

MFJ-1270B (Thanks to Ron Parsons W5RKN)

The 1270B comes with slip-on shorting jumpers between 1-2, 11-12, 13-14, 17-18. There are traces on the PCB between 3-4, 5-6-10-9, and 19-20 (the latter trace needs to be cut).

Short pins 11-12 and 13-14 on the Modem Disconnect Header (MDH) connector.

Make a shielded cable with the following connections:

| MDH | Signal | DB-25 (male) |
|-----|--------|--------------|
| 1   | _DCD_  | 1            |
| 5   | _PTT_  | 3            |
| 15  | _GND_  | 8            |
| 17  | RXD    | 9            |
| 19  | TXD    | 10           |

MFJ-1270C (Thanks to Mark L. Hammond KC4EBR)

The MFJ-1270C is the same as the 1270B except that pins 1 and 2 are shorted with a trace on the PCB rather than with a shorting jumper. Leaving this shorting trace appears to do no harm and makes the DCD light on the TNC active.

PacComm TNC-NB96 (Thanks to Paul Evans, W4/G4BKI)

The traces between pins 1-2 and 17-18 on the PCB need to be cut to free up the TNC from the on-board modem.

To attach to the AUX MDH on the back of the TNC-NB96. You need to break open 1-2 and 17-18 on that header too! The board designer must have gone a



little nuts that day and left the cross jumps in! Otherwise the wiring is identical to that on p35 of the DSP-93 Assembly Manual.

Make a screened (note that G4 call) cable with the following connections:

| MDH | Signal | DB-25 (male) |
|-----|--------|--------------|
| 1   | _DCD_  | 1            |
| 5   | _PTT_  | 3            |
| 15  | GND    | 8            |
| 17  | RXD    | 9            |
| 19  | TXD    | 10           |

By the way, looking into the AUX connector on the TNC-NB96, the pin 1 is in the bottom left corner, so looking into the AUX connector, it looks the same as looking down on the J5 MDH in a "normal" TNC.

#### Documentation Updates

-----

On Assembly Manual, page 22, Volume Control, in the 4th paragraph, change: Connect the wire from the square pad (towards the front of the PCB next to the dot) of R234 to terminal 1 (square pad)

to:

Connect the wire from the square pad (towards the front of the PCB next to the dot) of R234 to terminal 1.

On Assembly Manual, page 23, Board 2 Initial Check, in the 6th paragraph, change:

You also need to inspect carefully the top of the board Now check the analog +5 volts by checking the voltage between ground and the square pad of C233.

to:

You also need to inspect carefully the top of the board Now check the analog +5 volts by checking the voltage between ground and the square pad of C227.

On Assembly Manual, page 30, first paragraph, change:

For easy triggering, an oscilloscope can be connected to J203 pin 10 to monitor the output voltage level.

to:

For easy triggering, an oscilloscope can be connected to JP203 pin 10 to monitor the output voltage level.

On schematic A/D Section [1 of 5], REV. 02/08/95, the designations for pins 4 and 8 of U209A are interchanged. Pin 8 is +5 V ALG while pin 4 is -5 V ALG.

-----

#### July 14th, 1995 Update Section

##### Documentation Update

-----

Ignore the item "Note to users of Icom Transceivers ..... 36" in the Table of Contents on page 1 of the Assembly Manual. This item is not relevant to this production build. The item was left over from a previous build.

##### SRAM chip type

-----

The SRAM chips being sent out may be labeled HP93C9509 M628032-20PSI. These replace the SRAMs listed as 71256S20TP in the Assembly Manual.

##### RESET solder pads clarification

-----

Solder one end of each wire in the two holes located next to (to the right of) the word RESET near the upper right corner of board one

-----

June 30th, 1995 Update Section

#### Documentation Update

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The June 1995 DSP-93 distribution ships with Version 2.17 of the EPROM. For Version 2.17 of the EPROMs, several documents on the distribution diskettes have been updated and their content included in a new document "Programming Guide for the DSP-93". The documents MONITOR.DOC, MEM-93.DOC, and MONMEM.DOC are now obsolete. Also the comment in MONITOR.INC about the SIN/COS table is an anachronism and should be ignored for Monitor Version 2.17.

The new document "Programming Guide for the DSP-93" is available at [ftp.tapr.org](ftp://ftp.tapr.org) in the `tapr/dsp93/manuals` directory with the name `ProgGuide.word`. The file is in Microsoft Word format.

There are also several other documents currently in the same directory.

|                             |                                  |
|-----------------------------|----------------------------------|
| DSP93_Interface_Win_Man.pdf | The D93WE PSR article            |
| DSP93_Assm_Man.pdf          | The current Assembly Manual      |
| DSP93_Ops_Manual.pdf        | The new DSP-93 Operations Manual |

pdf documents are in the Adobe portable document format. Freeware reader installers for this document format are available at:

See <ftp://ftp.tapr.org/tapr/utils/ACROREAD.EXE> for Windows.

See [ftp://ftp.tapr.org/tapr/utils/Acrobat\\_Reader\\_installer.hqx](ftp://ftp.tapr.org/tapr/utils/Acrobat_Reader_installer.hqx) for MacOS.

See <ftp://ftp.adobe.com/pub/adobe/Acrobat/Windows/acroread.exe> for PCs.

See <ftp://ftp.adobe.com/pub/adobe/Acrobat/Macintosh/2.0.1/AcroRead.mac.sit> or <ftp://ftp.adobe.com/pub/adobe/Acrobat/Macintosh/2.0r3/AcroRead.sea.bin> for MacOS depending on which version you want.

#### Monitor Version 2.17 Programs in EPROM

-----

The programs in Monitor Version 2.17 have been updated from Version 2.16. The new program list follows. Where the name of the mnemonic differs from the .OBJ filename, the filename follows the mnemonic.

|                     |              |
|---------------------|--------------|
| 1-SCOPE             | D93SCOPE.OBJ |
| 2-SPECTRUMANALYZER  | D93SPEC.OBJ  |
| 3-FUNCTIONGENERATOR | D93FUNCG.OBJ |
| 4-CW_93D            |              |
| 5-HFU_93X           |              |
| 6-HF_93A            |              |
| 7-HF_93AE           |              |
| 8-MEMTEST           |              |
| 9-PKTP1             |              |
| A-PKTP2             |              |
| B-PSKP1             | PSK93R1J.OBJ |
| C-PSKP2             | PSK93R2J.OBJ |
| D-PSK_93T2          |              |
| E-PSK_93P2          |              |
| F-APT_93B           |              |
| G-TESTANIN          |              |
| H-TESTBUZZ          |              |
| I-TESTLEDS          |              |
| J-TESTPORT          |              |
| K-TESTRAMP          |              |
| L-FSKISIP1          | FSK93K1.OBJ  |
| M-FSKISIP2          | FSK93K2.OBJ  |
| N-FSK15P1           | FSK93U1.OBJ  |
| O-FSK18P1           | FSK93U1B.OBJ |
| P-FSK15P2           | FSK93U2.OBJ  |
| Q-FSK18P2           | FSK93U2B.OBJ |
| R-HF_93HT           |              |
| S-HF_93HTE          |              |
| T-HF_MODEM          |              |

#### Power Supply Balancing

-----

After both boards have been completed and assembled together, and the "DSP-93 Final Check" on page 25 of the Assembly Manual has been completed, perform a quick check of the balance of the two power supplies. Both +5V supplies on the two boards contribute to the +5V digital power planes. If the two regulators (VR100 and VR201) have significantly different regulating voltages, one of the regulators will carry more than its share of the load. The voltage across the two 0.22 ohm resistors (R107 and R210) should be APPROXIMATELY equal (within a factor of two). Somewhere in the range of 50-90 mV is about right. Should the balance be way off (the voltage across one of them zero, say), please post a message on the dsp-93 mail list and we will work out a solution.

#### Testing DSP-93 RAM memory

When performing "Test 3: Memory Test" on page 29 of the Assembly Manual, you should test both banks of RAM memory. Both RAM banks can be tested by issuing the 'T' command in slow mode (i.e., after a reset) and again in fast mode (i.e., after a 'G' command). RAM U104-U107 is tested in slow mode and RAM U108-U111 is tested in fast mode.

#### Error in Test 8 instructions

When performing "Test 8: TESTANIN" on page 32 of the Assembly Manual using DOS, enter the command 'DSPLOAD TESTANIN' instead of 'DSPLOAD TESTANIN.OBJ'.

#### Error in Test 9 instructions

When performing "Test 9: TESTPORT" on page 32 of the Assembly Manual using DOS, enter the command 'DSPLOAD TESTPORT' instead of 'DSPLOAD TESTPORT.OBJ'.

#### Correction to TNC Modem Disconnect Header Signal

On page 35 of the Assembly Manual, the signal on pin 6 of TNC Modem Disconnect Header should be TRANSMITTER KEY INPUT rather than NO CONNECTION.

Ron W5RKN

also:  
rparsons@bga.com

---

## 236. All kits shipped yet?

From: "Lawrence F. Johnston" <ljohnsto@carbon.cudenver.edu>  
Date: Thu, 27 Jul 1995 09:50:32 -0600 (MDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.OSF.3.91.950727094826.14462B-100000@carbon.cudenver.edu>  
Rendered body type: text/plain

I realize my order was one of the last received, but I have not yet received a kit yet.

Have all the kits been shipped?

Thanks

Larry, W0EIE

---

## 237. Re: [DSP-93:1191] All kits shipped yet?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 27 Jul 1995 11:43:04 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac3d71cb99cd@[204.181.160.74]>  
Rendered body type: text/plain

>I realize my order was one of the last received, but I have not  
>yet received a kit yet.  
>  
>Have all the kits been shipped?  
>  
>Thanks  
>  
>Larry, W0EIE

The last I heard there were about 60 kits yet to ship (as of Tuesday) and about 20 kits were being shipped per day. So if you were one of the last ordered, it should be soon now.

Ron W5RKN

also:  
rparsons@bga.com

---

## 238. DSP-93 Boards

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 27 Jul 1995 12:26:38 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac3d7bcef418@[204.181.160.92]>  
Rendered body type: text/plain

Anyone with the "right stuff" want to help Bob out? You may upload them to <ftp://ftp.tapr.org/tapr/dsp93/upload>

Ron

>Mime-Version: 1.0  
>Date: Thu, 27 Jul 1995 12:00:35 -0500  
>To: w5rkn@amsat.org  
>From: kc5ejk@onramp.net (Robert Winingham)  
>Subject: DSP-93 Boards  
>Status:  
>  
>It would help to have a set of hi-res GIF photos of the  
>assembled boards. I tried with my cheap digital camera but I need  
>a close-up macro . The one I saw on the net is hard to see.  
>  
>  
>Thanks  
>  
>Bob kc5ejk@onramp.net

Ron W5RKN

also:  
rparsons@bga.com

---

## 239. Re: [DSP-93:1189] Re: Heat

From: Mills@huey.udel.edu  
Date: Thu, 27 Jul 95 14:39:33 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9507271439.aa05017@huey.udel.edu>  
Rendered body type: text/plain

Wayne, Ron,

I guess I had the stroke first, but as yet don't really know what caused it and why it went away. However, I found it convenient to extract the stack from the case and wrap with plastic wrap in order to keep the heat in and allow scope probes, thermocouples, etc., to enter. As you may recall from my earlier posting, my strokes went away when I swapped all ICs on the digital board, except the CPU and EPROMs, with another unit which did not have the stroke problem. Following that, both the swapper and swapee ran free of stroke. Dontcha love "solutions" like that? I fully expected the problem to return on either DSP-93 and have left mine running continuously since the swap; however, at least mine (and I assume

the other) have remained afloat.

Dave

---

## 240. RE: [DSP-93:1191] All kits shipped yet?

From: Bob Smith <rsmith@internetmci.com>  
Date: Thu, 27 Jul 1995 14:28:11 -0400  
To: "dsp-93@tapr.org" <dsp-93@tapr.org>  
Message-ID: <01BA5C31.A607EC80@usr14-dialup48.Atlanta.mci.net>  
Rendered body type: text/plain

Talked to Dorothy yesterday afternoon Larry - the resistors finally arrived and the last of them should have gone out yesterday and today. I'm waiting too - disappointed I might miss the weekend.

-----  
From: Lawrence F. Johnston[SMTP:ljohnsto@carbon.cudenver.edu]  
Sent: Thursday, July 27, 1995 11:58 AM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1191] All kits shipped yet?

I realize my order was one of the last received, but I have not yet received a kit yet.

Have all the kits been shipped?

Thanks

Larry, W0EIE

---

## 241. Missing hardware for pot/switch

From: Kok Chen <kchen@apple.com>  
Date: Thu, 27 Jul 95 15:47:21 -0700  
To: dsp-93@tapr.org  
Message-ID: <9507272247.AA05330@apple.com>  
Rendered body type: text/plain

Hello, all,

Like a couple of others, my kit is missing the mounting hardware for the potentiometer/switch.

I noticed a couple of folks have gone out and tried to buy an equivalent pot.

There is an easier way...

Notice that the push button switch uses a nut that also fits the volume control?

Heh, heh... OK, use that nut for the volume control. Now go out and buy a replacement push-button switch!

It is probably much easier to find an equivalent N.O. push-button than it is to find an equivalent pot (in any case, Alps makes some of the best pots in the world... HI-FI nuts swear by them, HI). The supplied switch is a little cheap anyway, splurge for an ALCO push button! :-).

What a beautiful kit this is! The front panel design is a little amateurish... having to replace the power connector is a hack... but the rest of this kit is absolutely Heathkit quality. And, like building the Heaths, the actual process of building the darn thing is half the fun. The journey is the reward. If you are lurking on this newslist and have resisted buying the DSP-93, you should seriously consider sending a cheque to TAPR!

I have gotten my unit, uneventfully, to the point where the green light is on and the yellow light blinkety-blinks upon reset. I'll have to make a trip this evening to buy a couple of RS-232 cables for my Mac for the next step...

BTW, the silkscreen on my unit said the right thing about the power connector, so the comment in the instruction booklet about the erroneous labelling of the power connector should probably be deleted in the next version of the booklet.

73,

Kok Chen, AA6TY  
Apple Computer, Inc.

kchen@apple.com

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## 242. Additional Memory for dsp-93

From: alan@kether.intellint.com (Alan M. Friedman)  
Date: Thu, 27 Jul 1995 20:57:09 -0500 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <9507280057.AA00692@intellint.com>  
Rendered body type: text/plain

My kit is one of the last in the current batch, so I hope to get it during the next week, now that the last ones are shipping.

I wonder how I can get supplemental memory SIMMs for the dsp-93. Are they available from TAPR or should they be ordered elsewhere?

Also, I was interested in any experiences with the TMS320C30 as opposed to the 'C25, since I'm hoping to work on designing a DSP using the TMS320C30 on a PCI board for use in the new 9500 PowerMac (as well as other PCI bus '86 based machines) While I will be happily busy building the dsp-93 for a while, in the longer view, I'd like very much to work on a PCI based 'C30 with its 32 bits and floating point math capability, perhaps later this year. Is anyone interested in collaborating on this? In addition to communication based apps for which I purchased the dsp-93, I'm particularly interested in visual and speech pattern recognition and a wide variety of such possibilities open up with such a relatively high speed DSP/CPU interface. A 32 bit DSP along with the 132Mhz 604 available in the 9500 should really fly. :-)

Anyway, I am really looking forward to getting my kit and many thanks to all who worked to make it available.

Alan

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|                               |                              |
|-------------------------------|------------------------------|
| \\_\\_\\_ \\_\\_\\_ \\_\\_\\_ | Alan M. Friedman - WA3MLK    |
| \\_\\_\\_ \\_\\_\\_ \\_\\_\\_ | Intelligent Interfaces, Inc. |
| \\_\\_\\_ \\_\\_\\_ \\_\\_\\_ | (301)299-6631 (301)983-2211  |
| \\_\\_\\_ \\_\\_\\_ \\_\\_\\_ | alan@kether.intellint.com    |

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## 243. Re: [DSP-93:1193] DSP-93 Boards

From: fperkins@onramp.net  
Date: Thu, 27 Jul 1995 20:47:03 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507280147.UAA09647@mailhost.onramp.net>  
Rendered body type: text/plain

July 27, 1995 @ 20:30 CDST

CQ Ron W5RKN and Mark KC4EBR,

OK, I've got more SW to release, so I need official names. I'll try to use the names you guys agree on. Here are the code functions:

For the YAESU 736 crowd:

Satellite PSK, ground to tune, versions for both ports  
Satellite PSK, ground to tune, weak signal, versions for both ports

Satellite PSK, +5 V pulse to tune, versions for both ports  
Satellite PSK, +5 V pulse to tune, weak signal, both ports

A0-13 PSK, fast tuning for reentry, ground to tune; 5 to tune; both ports

For the rest of us:

Satellite PSK, Kenwood/ICOM, weak signal, both ports  
A0-13 PSK, fast tuning for reentry, ground to tune, both ports  
Terrestrial PSK ("true" TX PSK), no tuning, both ports

I look forward to your suggestions

73 Frank WB5IPM

PS, I will probably also need a name for:

Apollo 13 commemorative mic "bleep" adder for A0-13 SSB, maybe with SSB receive auto-tune :-).

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## 244. Re: [DSP-93:1197] Additional Memory for dsp-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 27 Jul 1995 22:14:46 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac3e050d32df@[204.181.160.22]>  
Rendered body type: text/plain

Alan,

> My kit is one of the last in the current batch, so I hope to get it  
> during the next week, now that the last ones are shipping.  
>  
> I wonder how I can get supplemental memory SIMMs for the dsp-93. Are  
> they available from TAPR or should they be ordered elsewhere?

My guess is that you should get the RAM locally. That's what I did. TAPR  
had a lot of problems getting RAM so I'd recomend getting the four you need  
yourself. It's easier to get four than a thousand.

Also I'm sure you did not mean SIMMs.

Ron W5RKN

also:  
rparsons@bga.com

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## 245. Re: [DSP-93:1189] Re: Heat

From: WayneH8117@aol.com  
Date: Thu, 27 Jul 1995 23:55:44 -0400  
To: dsp-93@tapr.org  
Message-ID: <950727235541\_124733889@aol.com>  
Rendered body type: text/plain

Ron,  
Thanks for the information, it always helps to find out what is working  
properly. I will continue researching this problem.  
I have connected an MFJ 1270C and worked the local bulletin board, so things  
are getting better. I would like to get that cover on and keep some of the  
noise confined.  
Please post any new ideas and 73.

Wayne Henderson WA6YET

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## 246. Re: [DSP-93:1194] Re: Heat

From: WayneH8117@aol.com  
Date: Thu, 27 Jul 1995 23:59:30 -0400  
To: dsp-93@tapr.org  
Message-ID: <950727235928\_124736574@aol.com>  
Rendered body type: text/plain

Dave,  
Many thanks for the information. I am collecting all I can find to continue  
probing this little problem. I will use your suggestions and hopefully invent  
some more.

73  
Wayne Henderson WA6YET

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## 247. Solder Flux Removal

From: "In space, no one can hear you snore" <DSCHULTZ@sssp.gsfc.nasa.gov>  
Date: Sat, 29 Jul 1995 11:38:13 GMT  
To: dsp-93@tapr.org  
Cc: DSCHULTZ@sssp.gsfc.nasa.gov  
Message-ID: <950729113813.c958@sssp.gsfc.nasa.gov>  
Rendered body type: text/plain

How have you kit builders been removing the solder flux from your  
boards? After years of kit building, I still don't have a good way  
to do that, a toothbrush with rubbing alcohol is the best I've come  
up with.  
Dan Schultz, N8FGV

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## 248. Re: [DSP-93:1157] Yaesu Beta test report #12

From: fperkins@onramp.net  
Date: Sat, 29 Jul 1995 13:00:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <199507291800.NAA28678@mailhost.onramp.net>  
Rendered body type: text/plain

Here is the pre-release of the new PSK modems including the x2a and x2b versions. I would appreciate it if you would check them out.

73 Frank WB5IPM

```
<---- Begin Attached File ---->
begin 644 NEW_PSK.ZIP
M4$!#!!0` `` `` `(` `9D_1X?.]WY7`0` `` `8* `` `` + `` `` `3D577U!32RY46%255MM2
M(DD0?2>?"]BG?)S9:'H$0"P^#5YV5D4E!%=WV\JN!&KHKNJMBPQ_OYG5+2(X
M8T"$@%U5)\Y>2DN0[Z$3B^!=J]W`%^AW3GN[L'IV6C<;#0;?Z%%$/3G9PBY
M\.@#$=70Z>W)Y<02LE/CGGCQ>GM]9<KU`MC)#@OM!16PJ>I-4`+EC<M`S1^
MYK-0&(F%T_]VU;[.``'T6?HY;3;N(QHGG>5!H@,!3U9-9QXMC`IA_9@`(.<G
M,2#$%`^UNG?M*V`^+Z^#9&^O"WM'K4Z019J@W3X^`!+0`BND,E`:'ZZ']J&S
M.T)G2_8"Q;SEU%2%`7HAD[8DMEL_$QG`@OE9]'ZX6`4Z$TG[,H'$H@BX%,
M57K;,"A-QW.354$J)YYR608&5%:\TQ@0&`Q$Z4/G,X)QQ(P$1*/8<O+P1LG
M]I->K|>CE[LC1`_Z9^/[N%MQ;R6TF0E;?*`WP^3]\<'E'='^#EE+@/8+(-W
M6#]!:-'K'='6&-J`]'#&7*`VUY7C%,8/X()O@P><GS&`#Q+0]EL3(R%X/"U
M/H^ZA`DLGFK%)HV2N$%?*`TPW5C^W^IM.`^QN<>[]4_<C9'>&7JM]/UT00
M58K)B6TE)UL\]G94LCM'5#(X/P.)$Z655T:[:K2LIK03!8)P\7MI%66*55G,
M>6Q$%4=^=,*/8>'DX,+X36ELT0[5]I]-=J`HDPU^JAVH#+4E&8>-6?`9;E0
M!>JXU`M(#/_)_1%M_!`E@>G>-C49[R)%<(L4&YX9`ES,00F`=R,"4&GFN)
M=XH\Y]W6@9G$(`^/\^_Y+_WK4'\9:-CJ=?F#XA5E\&C7!J-%YZW*V`B&F@D/
MRL,3,IP$H_,E+&$R1S1-[#->1:%\!AL[:PH2V(MHIDI)`<#0C($`FO-16-+
M:V;J21A"K2BI^1AEIK"J>F7,8ASK=H.]ZEG?C>30B+/O>3;"+?L4EM`E\I
M#`0;$[BT:]@PBO&1',L3JTSRBKXAMSS'4/SQ^`YW<7U^<WX_X@A00/S\QD
M@I9H)D=P,;J,,'L`#@[!L^!(,Y0^!1'M1_9;Z"40#9G"S2U%+FH]M$.!BR$
MQ,I80Q&?@%Q0GN^: #(#E<&6E.N$XKQD@SB5:%=XG%/1U*XC_6QALF`_9N4
M-3JZ-)0BL]#DAING(!]!])#^:]@RWE2@&195AZ+DG&5KGR2\XZ90;YYB/
MTM^#0]62'4WH^4EF,H>+2ZK^)-45D>IV@1M^KFIAPX&J$C)ELU#P[, :0P6+&
MOYCX^$2HG*];;VK]+(]#0;0&'8L_2J*`LC8/5]OJIA#>HY:4-P*:"2LCB<R$
M7`+`*&'0H.416A.(IO(AFIY`)IA\9<,D#N<8(AXEK&I9BD),(Z7H^]L6P?^`
M#@04/EDUX?JS6%1L==4VJQ6.4EJ6Z)>5E\,XA@A$>Y%Y^&9Q" I=&<Y0Y`I>U
MJBK3,8=*TWM1%5!L\ [5.KENP'AQKV:G`O=MJS<90_P-02P,$%` `` `` `@` (% _]
M'DZAJ1GT!@`BQ,``P` ``!04TLY,U(Q2RY/0DJ=6-N.) *D.%]I_P7,;PE
MM^_I1-A3'5V:W=' ,Z5&69#8X4M@4_T_7\7QLW=UWKEZG04YS_99'\0Y4?59
M,(???)_`EPKXZAX40';&E)V359SL!4%INNY<^;8^Q80#D.`F^`_`"0Y4' (H[
MBL359L(1+R$0Q\<G]K`"F_T^&UTX:S:7K/-TS8;@OVZ6&)]OPO:^%! ,N]4L8
MF^O=S` `` `=?^V3#""3R;<G`Y8#/B; ,T;!H)`&0>2.,3`FQL+8(YOPHSX7#H\!
MS06F2ACA`N4%2@K$`I06*"P/+Z;\%#DTF$64,I04SUC4>;YWOA) (^KYF`XN
M7; .G@M0! :@`5`&`^6`*D`5*!68+D`5F`^$SW6A011:8)3LCZQC`W$[E7EE$
M>Z`N%617=X2]P\ :@CMD<##ITK46.<%T2AC7XN&`Y&AF>VZ`AS#;^?L2"10@
MJQ<U`C`K`"U&#C;[C] ,. !P3@Y/Z["$YTM8C0"QY`EL/8KY[!-/U=R;FZ#U
MF6I(91B94\Y#Y!ZADX^/"6< ,8VQ/&!29VI\<3V)XP`P-IJ7F$D6$4YLO`
MO(J[#. .)=9RV$0/R.+/I9P#AN!] [+W5, '-X>O?YFMT.MY/KA024*TB!!RE4
M`9<ZGL(Y)X9MPIWIF`6.%LTG\NPU;5_H&2-!63`T[.P\ZT: :8N@P*: <7>C`T
M; ,B)UL , #KG, 0`^AU<J,4?W_,$8H6"]I09=6UF5H`YK0SY58B=(UA?B/4I
MK0&I]<:B1^50(N>8KFDD$9:'4Z_(MN*4*-Y_B!+/J1.K)#RV;ABW!;D_7/9^
M7@;U?4A#>7V^:T`GN1Q:319MH>:4ZI-==5.KU%Z8-YJO)ZHCU`/!LF>J^5#B
MEPDG,HQ:R6^7RXZT(A9;$UV3L\94B@L0,N%`GU4@[+.9?@4YOL?(3H%=>6?0
MLEG7^S6;1V!_[$^M3DYN,+1#5^KTK%TPZJ&_5(NX`C]T^J+DB7P`S0%3:
MM--9%ZN>TH`Z_R'I`M9W)'C1S;HBEV`<<(7ATUX_A+6]Q6F)2F7&[9ZR`'
MI*%QLY$B'A.QX>-&36.J9=M;P,*G/^/ENTY#"*$N:6=]UT_U+&1>0BTV^%/#
M!` :RZ.=09<>WJ`*MY%Q+N96F>1, .ISZ7A)=$.T@/76%/9NLI(BK(F`Q6V6P`
M(\3C\PE./YQFJ670V.09J-7+.JGL6IJGI2KDDV<E`1/SZ0I)-OST<<D^UHQZ
MN:MXV`J`6P.CI< ,)81+VGHX`Q-:TA%F8%WT\1/M9@RC.<CAJR`45I!I5885
M9+G39FN^7Y>Q0X"]4&PPX0@GJ>"E":G]09CX*A6>L.XITK$W1X-"YZ7POZR
M@-QOT^XD86H-*Q1Z`SQF07]9T"$X"12L&(2M)S!`&FI[N5: \;PC*0*S)N2V$
MQ[=@G2`K+/_XU4`W%-^^3A0/M1Z8+.P:EN<H]SSGC_9[/G$-]48]2L4MRW, ,
MJ]7TD2U<$;?!YG_8C;5@GU7F5'(S;D1! ?K57R&-ZERB?;JY0PI`7.M80(P_DR
MDD3V9[PL]K)_-3A!B`61%SD-30SM:=/R`#5>79X\Y446D=/@(*`-3MQMK)CW
M+5M5;-`*=S($B`<#`U^=5#I$`S<N^P&&-F?#2T96C2T\`$+K>/`_/;U:-`OZ
M+.H.OE8@CI?9\XN2@M`QH^GM3_=$HV=<7\CC4!*""TH*O)4Y;JG`+C*P7V$>
M42^U?Y$C`IL^U66=ZL+"8'E?T8YD\N[5;J25+\`P7G^4)'9G4^*ZD23)Z56J
M\1: (2S_JFS=YWL)! .>JJ>#8]\6X:8>^4:M]=>W-F#[?0:5J>4S*T_1N?
M6TF2]N?`&0C2:KU]X73]?GY`^1PD?L?(<M%GG^`["[R^@/D;<C9_0+9V<W0
M/88A9V_5`Q>#1X=WLNA<R\6J9S[ ]6=E-^F`D#`30]\S\8K=;CBV--5`JXZ2[
M8-4S:QV2&=DY`> \) (6074G`A+]Z?76AX=A:SZ`+VA>7%Z)G5Z;"&"SMA0"W\
MC`H`W39/Y_WRIQA`KG#17RC4W`R)B$2F!;"$%JEEW1VSL]R#D=F?CT_PC3ZJ
MK_0YG1@P#AJ3ED_@B0K!0DYT4:ZQMJC[WSPXL7C`Y[38P`H]2]XK.7GWMN
M&8\):W^>H^S9UIX^[YDPE[&G:]!7]QC/'L<H\>D!6N(NMWT,_OS`G`M$<8>
M$!H>10BXA`L8"<-C.'MRWIVUFTP`G<T4HC"54%DV)"(2F1;`$E@4C9Z`?F8
M27-I-LVG&U041_6S/C\G!HB%V*U7?V"?`#%0#!A_17^GXT\&2C5A]N>?T?F$G
M`^`_`'I2D/\^XT^&9JO;A?WYEW3\^P<F1U+9^2LZ_F1@U#R+E/;Q^=I>/1#
MX$22/W/`_NO_4$!#!!0` `` `` `("1?_1Z9Q9>6]'8` `` (L3` `` , `` `4%-+3-2
M,DLN3T)*G5A;DN6H#OR?B-D+B/?],Z_U;^EF(G`*53$S`=T53?@8DTI)))+=
M_-5`/_VKLX[5`_:'[VVS_Q8SH]ZK@4C^/GW7P`LJW.8J-/Q9RC9.5G%R5X`
M2C0SS150V,9.(#Y+HK_`'[ ]>`"C.#4DKA8#1SP$(Z`U^SA!1;[K0M=T#F[
MEWSSNTW4;P']>+=$^W\#V0$SF4K`6%S08B9)`?[MF6`$GPS<W)F,`&DC8R#N
M3", -@V=8V! ,C(6Q1S;P<V(N`!X#E@M<*S!68*S`&#-="HP6&"P/+X;>]5F
```



MTN\$66, HXKGKFHDS]W?A[ (^M971>7KMOS, `M8!: P"5@&K@%7`\*F`5&16X+F`5  
MN`^SW6SOPRQP2W; &KF, (]W8> [95%MA?K7DV=0KV#MK`D[X. #2E6LMHLET  
M15`N1=6`Y&AN>RY`A`#; ^?L0&RA@3BZ>?, "M(G08>[ "Q=I=AX\*`N!B?UV8\$,  
MSQ=8%\*R>/( \_1 [&?>\*IFGMS\$: P^A\$A2F4; N\*>) #Y!JA@4X]/ "4: .&, 9\OC`  
MI<ZM\<`3V9YP/P:VI>811H93N\^YE7<51A/I+. `PQYZ9A; \_7, HY8`B>Q]Y;  
M#3. 'IW>?K]M-M9U<+Q2@7`" !#[: P`%SJN`KON39L`W=NQR(M)S]Q#[ [LVU?  
M[!DCP5@Q]NR@; F0KA@[7, KIQ5Z, /1M[XGV]X\*7G. 8'=AU%<J, 5K[ 'F"L<)`  
M>J, 9VYF5H`YQ<"; &=, C6%^, ]2FM@:GUQJ( 'XS`B>DS7-) \$(RX/6\*ZJMN", 4  
M[S] "B7KJQ"H)CZT; IFW!WJN609]707VK: `C8^OLD=%++H=5DV19:3JD^V54W  
M3Y7: " ->-[I\3U9`JT>#9, X\_[, .M] \$JBPFBS^G:Y[\$@08K\$Y. 7.B<]Q\* <0\$@  
M`Q?&?`!AZV+&%41CCY&=`I, GG+W+9EWOUVT>@?&). \_G7XN00`A>34>-?E8:G  
M`0PYL57+N!\`=EM9<\5^!=P`LM\*GG71>K`I\*UYB7, CE6R/6=/5YV\ZY(-9%P  
MP04CIEU^@#`7]P73DY1+##9Z92ESP#8T+C911`41"SYAU3F\$<GVEK#PZ<]X  
M^\* [3`"5)>UGG6GH7`R]/<#EYKF, !!%OW\K>SX%@@E9QK\*; ?2-&\_@H/6HY  
M)#PDF5([#(4)F: VGB!P@<S)89; ,=C!`U9DU.5TVSU#)I; /), U. IEZ5; V4YJG  
M; 57(NL)`!-R83U=(LA&GCTNV>C/J[1JW; @?V9UT<`%RCB!<. JV`]V/"2E(P  
M\$`NBCY]L-U, 8W<=\$>0@I`80695F5809; 3-EOSS?; S\*G8`U`?)#A-`7+6"E":  
M>H, 5@U@M] (9Q3Y6(NST: 'CP0@\_WE` ; ??IKV3A`EJ6`"H#7C. @\_[RH` ,X212L  
M&[1]WL, <97C:R\_7B\_89P%(@YT;>%\B1C.XPGUBFQM6U6XI07Z>-Y\_H<F`SL  
M&K; /4>YYS\_A\_K[CBLZ\VJ1NF5@4-] `TGN+QA.@\]; V\X^T89WTW%?)T; (=60&^  
M6JOD, ;Q+E5>V5RE2`N\UUS`MX0\$TED? \; #8@\_ [5X, 3I%B0>1%M<.)03YN7  
M^>2KRY.GO, 0BHT.@-/@Q-WVBG7/LJV\*[5L[11A9`L#)V.)7!Y4. 8.#: 964H  
MLC\; 6S\*V: &SAQ=; Q\_\$%XY]6B6=%G47>(M8)Q0-R>7Y(4I(X=[; S]G371Y!G7  
M%\_-020+XD: 0@6IGCEBJLH@+ [!?. (>JG]2QSQB. -37996%Q8&V<\_5[4@F[U[M  
M1EKY4DS>+R. ]W=F, N&X%, (GVJF/Q%HA4>]L`RKK7]WP(!H[G5%U1\$SWQ+AI  
M[Y1JW\_WTYLP>; K\_3M`U.R=CV; \_S=2I). ?\_[-OVPB2; 7^/CC=F)\\_8+Y=, 04\_  
M8); +/ / ^`V5W]0?; VYBS^P6SL5>\_ ]QC&G+U5SU\, `AV^DT7G6BY6/; /VYZ-N  
MR@<C86`#?<\_+W: [Y=C26! .E/DZZ"]8E\ZE#, B, [I^-[0@C9A11<R(00SRXT  
M7#N+670]Z\+R80+; `@BPA@L[8<`LXHSG`73; ?+=GRRL81BZXG`\46F[&1\$8R  
MTP-X0H^ .9]VIVUGNP<CLSQH38F. ,)U; &G#0`S, 7)2<N:L"#)BD^--08KK`V  
M; F/O\_/#%`TZ702; &@U`J70`9R\`]\MXS`P\*<\_SU`V; &0/DO=, N)>QIVNP5\_<8  
MSQ[/W\* /)`@5SR+KUJLS^0\$=<>X2Q!T##PPD?]W`=(V%X#&=7WG=G[2930KJ8  
M(( )IA, :R, 9&1S/0`GL"C: / (L[ ,\_J)MVEVW2?86PY, 9Y8&?. C. 4`N`Q+ZKS@>V  
M)HB)8L+X%?U=CC\5\*-7` [ , ^\_DN- /!=[\_<"CID/RW`'\`J, %0+=NS/OY3C#P4V  
M.Y)`G; ^2XT\QK// (J5]80YW. :I)`#23\_ ,SY^Z\_`U!+`P04` `` `` `H7\_T>  
M: E`4+H&` `` `` `P` `` `` `!32SDS4C%, +D]`2IU8V9(D^OY\` [ /Y%Q!G[!OG  
M]\_2N@N1F56S6VU398U%0N!R74A\$\_\`=7<?S; NSK07#W/VL[S>:V/Y?RH^BP8  
MP<^`\_U\*PK\YAH4[ `GR%EYV05)WL!\*\$\_ANG/ER\_H, !@Y@OIOB\_P`%/1[ `\*.X(  
M\$E>[ @2->`A!`XS- ( :`-?I^-+IPUFT06>; IJ`\_A\_-TN, [008WI=BX%+?8&RN  
M=S. =-`#4S/!`"#X9^`&Z&#%0; \X8!8-`" @PR=XR!, 3\$6QA[9P\$UM+AP>`Y(+  
+M5`L01@`7`"L05@`J\$@L#1\_`3: 4N72H!98R5%5/7Y1Y?C\_\0>`U?%07EZ[:  
M4YD%K` )6` :N`5<`J8!6P`H0\*5!>P`M27^5Q0; V46J`4[ (^H8PMA. S; VRR; !  
MNE>07=T!>X>--05WDL%!I9NNM<AQIM. \$<4\ \. 2`YFMJ>&V`AU'; ^OD0`!<S)  
M124`U`I`A1A#&C; V!#` .`HV)P4ML. 9&A0L!SPT: 0U6X]B-00\$4S7WYB9( ; 5. 5  
MJ70C8\IYB-PC%- "9#ZU\$`V=L@Q\; 5.H, C0\^`-@3YF, @+ #6/ , #\*4PGSYF%=Q  
MWI\*\$)]+9RV\$0/3V>?R[E`#`\$[V/O3PTSA]: [SU?MY^1V<KTP`>4`"6@ (H0)<  
MZG@\*Y]P; MH\$[P\$5+`"T: 3\39:]C>[!DC05@Q]NP>`W, C53%VJ)33!WLQ]F5L  
MB?>ZP>N<YP1V`T9QH19\_ ; , \3C!4`GE9FU+6960`F%<0>NP<P?K!6%MY`C` ]  
M\_6`1H\_#R#FF:]J]I: `4Z^8; <5IHGC\_2I1X3IU8)>&Q=<-R6Q#[D\0>SYM!  
M?9^D(6)`W^K0R5P. 3TWf; :`DE&K+KKJ156H0S!^JKR>JP]7C@69MJ/H0XB\X  
M, <, HE?GM<MF16L18:Z)K<M882G\$!( , 7VJR`L, ]FVA7DV!XC. P46U9R]RV9=  
M[Y>91V`\[\$[ ^8W-R, (6; R7CL7Y6`IQT, 4=NJ>=P/`KM]6`-%0`+F@: S4: :>S  
M+G8P!^; UV`24`R0[/&RFW9%; H9QPP7#IKV^@: `6]P53DY1+##?M=9@#P0!P  
MLR5%/"IBP\N, FL94S?8-57CU9[S\K-, `P=4E[: S0^JF>A9F7I^5V\\*>&`"11D  
MT<] ?RHY\_H@>DG, MY5: :YX+ #J<\EX279#E. C\*>S); #U%1( "TR6`5S58]0SPV  
M`^?TD], LM70: FSP=M7I9)Y1=2\_ .T4(5\XJQ)P, "\ND\*2#3M]7+\*/-J/>KG`K  
M=F!/\_IN#XR5#5\ (E; 3V<CPDIZ8#I6!=] ?`G[L0RC. HCA1T\$HK`#3J@PKR`\*G  
MS=9\`=8^BAT`M<`980\*(IP(A1\$[K#9: !HUKI#> .>A%W>S0T: !\`^X<&S/UG  
MVITD3\*UAA: !/0#; , ^H<&`<!)HK` , 0/4>YIB&VEZN%I\W! , U`K, FY+81FN1V=  
M, JLM\]C53[<4\_ [Q/&\^U`I@L[!H6YRCW/ .>7]`L`F9KKD\_4(%; <LSC`45R-9  
MNC)H@\_\[M!]YAG52G5?)P1N8%. \_6\*GD, [U+ED^U52ACR! , ZUBTCC?%0=CNS/  
M>%GL97\W. (&+19X7. 0U. \_UIT^(<U5)=6I[RD2PBI\`\$!H`U. W&VOV->6A2H^  
M7]HIS, @2`\$[%M%&=5#J`@7N7]: K( \_FQLR=BBL84/MH[W#>; IU>\*QHL^B[F!K  
M!>/X4`N^4U+@. G8T0?WIGFCI&=>; >9R4!/ "5D@)K98Y; JK!+&=@OF\$?42^WO  
MY(B: 3: \_JLDYU86&PN\*)H1S)Y] %NY, GOA&&]?@E) [ , XF!+XSL%2[F%I!& , +2  
MKX+F7?Y=: \9J+35W\6[ :82]4ZI]=^W+B?W; ?D?N: ?9IE) \*J\_ . ^Z@5K?\_Z7  
M?]F2)-5?, \*?+W`[!`"YS\_P6S7. ; Y"V9WF=<OF+<Q9<#L[-; W<\_QJH&]5<\?  
M!H\-[V/1N2<S`YOUJGSZ\V; Z8`0, !, \_W[/QBIUN. [8SU4&ISTGE3B6+IF; 4.  
MR2Z. =X00L(LIN)`7[\XN/'AV%K+HPL18`F/<K]BL1H>=, #K&9H/5YYDG; CX@  
M@BFD2[PV%\_U">8R)C&2F!M`\$&D'-HR[5I0KA21? , \_JRV4: UE3: GXP/Z0D\ [  
M`46`! ?WOC=MB<], XC[7W, \_; .C9<N\*%WVFA@-H]2]8M0+SSVW[#F`LUZ5M3\_/  
M9^U9\IX)0V7LZ1[ (JWN, MD>; >SRR1%: QC. NT@S, \_KQ`&'L`-#R4`\\$/US\$2  
MAL=P]DQGW<=H=\_ , -#H@BDDKL-`)C\*2F1I`\$VK\$4FS, A?WYJ\$NUJ?XH: AMM  
M5%MI<SL^V. <B>0, \_#0^PCZ/H, `Y!`\_S, =OV?@0<05]N<\_I>/W#`P6YY`4Z. =  
T\_M\_)Z!W8YDR?7/Z?@]`Z^W-30\_E([\_R\$#-, "?E49M\_3D?]\_#N>Y"? .WW\_]U!+  
M`P04` `` `` `K7\_T>P-; 83>D&` `` `` `P` `` `` `!32SDS4C), +D]`2IU869(E  
M`0[\; [ . ^`XA]\_EB`"U]IW(7`%YD]4V5=: 87%@\#EVI" (^H^OXOBW=W7>N7J>  
MM9]G^UJ?C\_ .SZK-@!+ ^\_DO!OCJ`A; H<?X: 2G9.G. -D/@- (\*UYTKW]; G-G`  
M\]T4\_P=XJO` `1G%`D+C: #!SQ\$H`X.Y\_90PML]OML=. &LV5RRSM-5&\#\_NUEB

M[-`\_]KX4`Y?Z`B-5090II`/P;T\$(\_ADX.9T,6(DC(P!NS.-%-`PR#XR)L3`>  
MC#VS@;0:7#@!B07J%8@K\$!8@3!ZN@!4(+!`8.E^&`@J<QE0"RQEJJJ>OBCK  
M\_&[\O>'U?%0EZ[:2YD%K`)6`N`5<`J8!6P"H0\*5!>P"M27U:ZWMS(+U)\*=  
M\$74,86R7EYR/9BW4^07=T!>X>--05WDL%!I9NNM<AQIM.\$<2V>')`<36W/  
M#;`0:CM\_7R\*`N;DHOH#:A6APHC!QMY=IH`#43\$XJ7T',00/6`[X:-\*[K4<Q  
MFWWBJSI[Q.Q.D]J6`5+J1,>4\1.X1"AC,AUZB@3.VP8@=\*V&Q@(<?`P)\SD1  
MEIIGF!E\*8?{XF}\_B0"4)3Z2SE]->>GH6\_US\*.6`{WL<Q6@TKASZ&SU?M=G([  
MN5&8@`\*!!`2\$4`\$N#3R%<^X=-I[ ]8#A6@:%%XXDX>PW;ASUC)`@KQIZ=G6?=  
M2%6,'2KE]&(OQIZ-/7%BX%\_SGE.8/=A%A=J\<?VO,!8(:#ULJ\*NK<P\*L+88  
M>--CYP6%V/M134PM=%8)`@-SG`]%EVJH3EX=0K9EMQFBC>?R5\*/+=.K)+P  
MV+IIN2V(\_<EE[?]-H+%/TA"PSV]UZ&(NAU:3>5LH.:7:LZMN:97:#^:-ZNN)  
M&G#U;-`L3U4?00P%)V88I3\*\_72X[4HM8;\$UT3<X:0RDN`&3@0IL5\$/:93+N"  
M'-MC9\*?`HIJS=]FLZ^,R\PC,+[N3?VU.#J9P,QF/\_4^EX&4`0]2V:A[WD\=N  
M`J9<\$:^^>2`K=KTK(L=#!G`YN<P.5;{YSM[0.RF79%J2<(-%PR;=0D!QMK8  
M%TQ-4BXQW"1Y#G-&!HW6U+\$HR(V?)E1TUR:)/N&\*GSU9[Q\UVF`X.J2=M9W  
MXU3/PLS+][0\_.M0@8(L^OE;V?SM\*J"5G&LIM]\*T"PZG/I>\$EV0[3]VFL">S  
M]101!=(GDU4V6\_4,\=A\G#-.3K/4TFEL\G34,\IS0CFT-`\+5<@GSIH\$#,Q7  
M5TBR8:>/C^RCS:RW:]RZ'=B?S^>@>,G0A`!)6P\_G<T%\*.F`ZUD4?0[5=+,H  
M#F+X\*%B%619E6\$%>=QIL5\$?A\_57L0\_@=C@[+`#Q5`"\$R&F]P8K!K%9ZP[RG  
M2L3=\*@T^AD0@>&G`W&+[B1A:0TK!+T!W308+PT&@(M\$X3`PUGN88QIJ>[E:  
M0&\(FH%8DW-;`,`V.9`3\*K+;L8]<XW5)\^YPVGL],%G8-2S.4>YYSE\_2#:"  
MSYOU"\*56!@[?2097S!H@\\_M!]ITSJISJOD:-Z.K`"?UBIY3N]2Y9/M54J8  
MT@+GVD6D-[X0\_`L57A9[.3X-3N!B@>=%3H,3?W0:NLSJKR\$]>WDEB\AI<`H  
M@Q-WVROV]<="=NW=@HSL@2`D['%3P>5`6#@WL?\*4&1\_-K9D;-`8PHMMX`V'  
M>7JU`%;T6=0=;`\*U0G`^UUR<E!:YC1]/;G^Z)EI[Q^3#/DY(<?J6DP%I9\Y8J  
M[&(&C0F\$?52QR<YHB;'5W5Y3G5A8;'X/]&.9/+NU6ZDY4\_"C/T2DMB=30A\  
M9V`I=C&U@C!E;\_LX6?Y?;T`9Z`2SG\7[Z89]DZICCVT+R?V;\_L=N:<`R=5  
M^=\_]U006\_OPO\_[(E2:I\_P)PN<\_\#YMLET\_@#9KG,ZP^8W65^\_H!Y&W-VOV!V  
M=N0[.68UL+?`^80!8\/[6`2N9>9CMUZ53W\_>3!^,A(<@^9&=?]CI`L=VQGGH  
MM3L90\*E\$L?3,6H=D%\<[0@C9A11<R`\_OSBXT/'<+671A83P>8]ZOV\*Q&AYTP  
M!L9F@]7GF2=N/B`"\*61(0#87\_4)IQD1&,E,#:S\*-H.91EVI3\_#2!;`,`JVV  
M46VES>GX@+@0TTY`T6%!\_WOCMMC<-<[SV;0-07/GI0M`E\_TLC(Y1ZGYBWX]?  
M>VW9:Q9G02IK?U[MV:0D01)`R]S+<-BK>\Z^9U][[-MFS8"WC&9\_2#<S^0&>8  
M>P(T/93P<4\W,!\*&QW#V3&?>QVA?-YEI=\$`\$4TA\#@.9R\$AF:@!-J!%+L3\$7  
M]N>C+M6F^K.H;`11;:7-?@GXOH\_3\#<`<^CJ+^#^7]SW3\F8`W\$E?8GW^7  
MCC\SL%J<2U\*B7Z?CSPP<=B1+KK)/QY\9>+VMV?F[=/Q`FJ&.2E-;?YU.NKG  
MW\_\$D/W'^\_NN\_4\$L#!!0```(`\$I?\_1YX4C03\08``(L3``,``,`4%-+.3-2  
M.5HN3T)\*G5=9;B4#0QOH.]4?0\I;`S7VF"BY[31G<7J@P+Z50J&"05(N7\_  
MA<8D/<^T"D3-GNVQ9\_`STUA-GU6C!C6WW\I.#0B3+1%\F?,A8AW)3X;0.XZ  
M3U2\_52]V<`35793`355>`0CDQEB:MW!"1\!2/.19PGP`H0#L844;<[?N>A[  
MOFX#`\*^+.:7G&]B\_U^K@VK['6-SN8DF2`<+;`,`\:(3NXDTXF#,1;"D;%\$",=  
M0Y@'QL18&!OC\$.+@1V.N.@(&+%>X5F%,EQAK,)8!:C"8(7!^H3AX\*G,=<`M  
ML-1IKC!+T/[=E^D/5BK/MX^"ES`Q6!BN#E<`\*8&6P,HPPC#)<9[`RW.25  
M;[:/,C/<XE.PZQ@>[M4>W4+VXOU[,BGD8\$#86`+D4P,1#E?N;`\*EDQ2P5!/  
MI@5NR;`=9`%V&VY3N!^Q@05F3\$G5`<JB\8@X.UITX`1W,Q\$K?G1&%XOL!L  
M8//D>7P^L<<LIR=8XL@M5GJ2--TBA[\*N\QR1H6`T/T\>3DX()ER.`#EX9L  
M38A!GT9]W,RX3GC+`\*`[SNDLBM=A<F))/\X\_6.05.`7<BD1@\_]\$C%=7"4^  
M8X1RW>ZF[4RCB@#`@7P8`L50`G@R?(N:Z.+)`S9CE41;-7]Q#X`W;80]H\*1  
M8:PZ>R\$\_S[IO7`%VN%3RB[TZ>W`V+.`W&(1MYSF#/<19\*;8:+/;RP-A@H#]U  
M)9U;12K`.EZ&PI&.V1%L+\;VU-[!U\$>7H@?C,,)V3/=RD;"4!ZM7HK9\*#I00  
M(DD)=NK8`XD<6YJN;<`>FY9#6%!=XYAH!'#L;TWH\$BW`WK)GF\5RSNTIU&AI  
ME3H;[UW<UQ,UD.K9X=FSU'T8`=O!610F5D7?5.I)XD6J/L<ZQS8G6\D4`7)P  
ME9@5\$[\MEK@B6^PT2:?'I(9S3CU2U\=U6X[\_`\_2=PVMQ)H0BBX71XM]-#"\\_  
M&\*RQ<[X]F+LCK&6A0V\*>(\_`\*CZ=;`//LU9.`Q;R-2;=B?V=/E]V]JWP5)@LN  
M&#&=0\_.N7\$N6#S)I:9XW=[&'+\$-71:[\*]\*YB`6?,%J>2ST[P1,6/\_T9]]]U  
M&B`DNN93]-NPZEE>>6VV!BLAC\$<E\*)?OI6=T),">BVEU7HK30\`CE?:\9'  
M83.F1T\*1GBRMI5(K4`RI<H6/Q@Q6<R6G&&:EE(K29,F+XG:HV[;RJ&E>?E6  
MQ6+[K`\*0C?ETA<P<8:T^9@WL]VN<>MVE/YLBR/))4,%05E;C[S/!209P])8  
M2B%]LMU=8>(.]O!\$S\*I4D.551BK()FNSK=QL/Z]B!T[!D.RX`,`33\*DCM;\*TW  
MN@)G\();YSU55`1[-#QX7@;'RP/1?E]^)XE+:U@5T!OPN`?CY<\$`<`E1]&(0  
MC][#2&2H]>5Z;XAJ`QQW9;B!><2)DUEF5QY:Q:YM`\_3IN<:STP!28V^YTD  
M\3W/Y6/]`D^1YGZSFE&F?N<8GL?R3J401M\`=9^N\$\_OI/K>N\$37=A\*\*K];\*  
M9<Y`N<E3VB07.`+E`>=<NPH^W]M0D0Z,C]4\_CJ\&QT@Q(\_/UN`XW)ZV?)^3  
MYFOP4Q:\_Q,)L#0X`;7!M[UBW;-OMONW=HHP"D>`L[EKP[\*`^H:\_?>M01G  
M9\0.EIPMOM@&OC\<3Z\6W8N^`5`K`V,\^7V^I(D(W72T?3VIVN2RS/M+^9I  
MD@3P(TE&M+SF+558)0H<%RQ'-`';7^)(JJ9/==E67:0P^+OY\$<R!WJU&^U  
M2S!2KS]&LBC=C=!PD62V7J46;U&8+.5?C>W[?`,`\_Z."DI^I)MNA)=]&,Y^3<  
MQAG:FXOT</\_[+]\_GG)WM`,`/K219^\_0\_A0726[M]\`YQOS\`7.VS.,/F/DR  
MKS]@ILN\\_X#Y.`A7S"3W\_>8SIS`5X]?S'DZ,B=+!`U4KU+%NO/JFZ1#T;&  
MP`:&42ALZ7:;I\*5)3>3V\$`^\*7CV+UB%>23HGR3TAQD(Q1XIER\_V98L=S2%#>  
M%+\$N[L`NSZ)!QSTIGHPLX@SZ1WT^`NV[SL8&\$8NN.I\_`\*&Y.Y,P`K-X`\$\_\$  
M(\_5LD+E=^!Z,(0W98D)L\$J/&C%GRX`D0G/2BR4L<09B4![+<K9K[G/Z/\*<\  
M<O&`T\_7LA?@U`9V>LX.ZZS#\W&P]N<UZUE]GU7+61G0/,^B#GOMS/F<^:PS  
M.Y]9.8>L^T`2`^,\`^TSXSP3H!G@1\$AGTL#(&`&#`\_G0@[S=%)&0+1:0@.6(  
M&`O.)`S"+![\_`\$WB47)Y5^K.Y\*>Z`V^\*^A`88]18)>`<H!<L-]Z]1]L2Y`D  
M2A(F`T5\_E^~/7)SL/3G7\GQIP\*SMYN:E>2\_Y?A3<<7K=I7^\_L\$Y\_E!@]R.I  
MZOR5`^J,.`D^,]?^B?G?Y6CV`;!,RK\Y?\_U?U!+`P04`````"127\_T>KS8\*  
MG/'&``"+\$P`#`````%!32SDS4C):+D]"2IU76XXEJ0[\`VGV8LS[\_B60]6\_I  
M1H`YE56:F59WJU\$6).&P36#G^9\K^ORW5A\$G4LZS/.=9/^M]BNME/S.&=^/0



M.3-2,E<N3T)\*G5C;DN4H#GR?B/D7\$/=]XV\*^\_Y<V4X@ZKIK=[IBN:,'+%'1\*  
M(I'L\_H^OX0BW=W7>N7JNM9]K^YJ?C\_.SZK5@!+\_^\_DO!OCJ'B;H<?X:2G9.G  
M.-D/@-(^YTYKW@-G-G`'\UT4\_P=XJO\$`1G`'D+C:#!SQ\$(`X.Z\_9PPLL]OLL  
M=.';V;UD04\_7;0#\_[V\*]L7\#V\_-2#%SJ\X5%]2YFD@['OST3C."3@903R8B1  
M.#(&XLXTTC#/#`FQL)X,/,;NX:<^P&+!<X%J!L0)C!<:8Z0)0@<\$"@Z7  
M8>'I5&7`+;'4>5RM!"S] [1N?;V0']]'?%/7>KEC(+6`6L`E8!JX!5P`HP(C`J  
M<%W`\*G!`?5K09WLHL<\$MVQJYC"/=VJ?;\*0[87ZWZ"[.H.V#LLK"FX(P;G4KIR  
MK45..IT\*QK5X-`"Y6K8]V"WX;;S]R\$V4,"<7-1\P\*TB=!A[L+%VEVG@<%P,  
M3FK?@0S]'Y8#/I[T;0-1+&:??\*K6WEP\$JWVI(Y5IY)[R/D2N\$1H8U\$,OT<`9  
MRY#`#I<&M\8'`P`<"?SBL-UAIGA%.X?'`-3G#>1\0Z>SCMH6=F\<^EG`.&  
MX`D<H]6P<NAC`S=;D?;R8U`<H%M"QA0IP:>`JO.?:8"+Q@]NQ"@ (MNI\_8  
M9Z\_];F`/`&`G&BK%G9^=9%](58X=+.;W8B[YG8T^0\7`/^<)\]#[, (L+M?@3  
M>UY@K#0>EE1YU9F!5A;#+R9L7,\$ZXNQ]M(:F-IH+'HTGIN<8\_HL.U7`\G#J  
M%=56G`K`R^LAQ`/JQ`H)CZV;IFW!WA\>[^N@L8^HB%G]^:T\$4MAU:395MH  
M.:7:LZMN:97:#^X;W=<3-9#JV>!9G^H^C/@+3E08K5+?+I<=Z44L-B<Z)V>.  
M6RDN`&3@PI@5\$/99S+B`G-AC9\*?`I(:S=]FLZ^,R\PC,K[B3?RU.#J#P,1E/  
M\_5^EX64`052V:AGWD\=N`]9<L5\!]X&L] &FG,R]V,&2<F)\_#Y%AG^L\;\*,  
M=T6JB80++A@Q?](#C+FQ+YB>I%QBN")Y#G/^`C0N-E`\$XR(6?)(51TUPJdGVW  
M\*GSU9SQ\UVF`D.J2=M9GXU3/0N7E96X'?VJ8P\$56`\_RM[/@6%!=!\$SK646VG:  
M!8=3GT0"0[(=ILY0V)/9>HJ(`IF3R2J;K7J&&(^R1E`TRRU3!J;!/!/UC/\*<  
MK1Q:FI=M5<AGGU4W)BOKI!D(TX?)'G`FUEOU[AU.[`G\7\25#!>2MA[>  
MSP4KZ8`96!]=\_ ,IV,X71'>SAJR`45I!E5885Y`&G5=9\5]9?Q0Z`VI`LL`#\$  
M58\$P(J?U!BL&LUK!#?>.\*A%W>S0\Z`^#X^4!M=^609.\$I36L\$/0&=-@0#P8  
M`"X2A<?`6]\_#`&6H[>5Z\7Y4`5B3L[;0K0@Z)198UDGKI14R^+;Y[3Q7.N!  
MR3@QB1V,\*/<YR\_KI^A`%0F/47IE%#?1Y+["P9M`F?]B-M6B?5^RHY6K8C  
M\*\`GM4J>T[M4>65[E1\*FM,![[2+2>;\0,\_LS'A9[. #X-3I!B0>9%3H,3?WO:  
MNL R:KR\$]+WF]1>0T.`"TP8F[[17K^G.SW;ZU4X21)0`<C`U^J@.`"/7/C?;  
M[;\_&EHPM&EMXL0T\ [PA/7RV:%7T6=8\*QCGR^WUD:0@=>QH^0:G:Z+),SX?  
MYGDD">")7)`71RIJW5&\$5\$3@NF\$?42QT?<405QU=U>4YU86&P?7^B`<GDW:O=  
M2,L?P8S],I\*H=#."W!E8JKV86D&8LK=]G\*Q[\_3[?@[.MTLY\_)^B&?9.J8X]  
MM`\G]F`\_];FF!P,G=?G?`=4+U0[\+`^RB235/V!.`E[G`?/MDFG`\_`-<Y04`  
MS.XR/W\_0(TYNU\`P.WOK^SEF-;"WZOF+P6/#][`H7,048[=>E4]\_WI0/1L+`  
MYOF1G7\_821[`=L9Z\*+4[&7Q3B6+RS\$J`9!?'=X00L@LIN)`?OCN[T`'=+&31  
MA87Q>(QYOV\*5!AUVPA@8FPU6K^<^<?S!\$4PC0^\*-N>@72C,F,I\*9'L`3>@0W  
MC[MTF^Z`EBZ8\_5EC8XP:\*V-.)P?,A9YV)HH)`\_K?&[?YJ[[]^)]V]P=[YT  
MP>FRGX71,4K<3^S\6NO+70-XNR=)&M\_7NW9J^2]\$G[+W,LUV\*M[SKYG7WLV  
MV;-@+N,:G](-S/Z\9YA[`C0]G!/Q3S<P\$H;'<'9-9][`':%WF3(Z(())I)#Z`  
M@4QD)#,]@`?TB\*78F`O[\W&7;M/]630VQJBQ,N9^<K#B^C]/P/]P#Z)8L+X  
M!`?U/`?Y4X`V)`^S/OY/C3P56V^>2E.C7<ORIP&%`LN3Z>SG^5.#-MJKS=W+\  
MAP)584Y\*TYA(+4?]'#N9Y"?`WW\_]U!+`P04`''`!A7\_T>7^KZT1<`''`#  
M\$P`#`''`%!32SDS6#%!+D]"2IU86:X<.PC]CY2]8#R/\_X\_KW]+C8-Q=MS,I  
MN9)5;1=PF`S4< \5)0SM7<@1E?`LWI[UGH];A1]9EF>^O=ORNP`D1R42:"C  
ME"BOU?/"OI"/B8A7)MY+!'\$+.%`F+UBYY\2A9\B8P;DLC\$`1?:B#M-!9Q\*&  
M,)JH0<F)50+>;=/.XRX.8Q;" ]TM.`C\);Y[#J#A[Z(QY`CY^=QN7LX[=`X  
M`M?F`B^]U619\$!;!DB;U)`BR+`BILH#<0S7F5I1IR)JREJPM`I>S[&2)L"S"  
ML@B#4S\_.BD<`RYJ`'(69BR2,\B/80TW543/, =1M8)FZF]7190Q3T7.6T\*0CNIP  
M(@LJ"RH+\*@LJ"RH+\*HL)W\*8WYJW(W&4)\*HOZ+.JS:,\*BOI=WGA':>?)A`:"  
MP^P(WGZC[N5YE^AQ)CID%J9(0;43B9D1]V;>=LCN&]&^5V+5))%F%-5YDH23  
M&".FD"9-0VR^V,NA`=E"A!A[XM\*VAX#67AJP:<#&'%WJBTC`GMNA(M%4)N:  
MKP5N1BQ]\X9<Y+C`\$`\_1W)T,1U3;3H"(WS:DB/LA^#29[C>ALWDOQ(HJ&\  
M7"ZDE>]XV-[!F0V^2<G+XILDKA9E#KW7XF?RK7?D<J2>D7-&4'3)(2@J58,  
M7">\C%T.&2`!F&9&F#2\$5F=4\$7J@)W<=AA=R\$55R-03T0`>'"A\_H0#AVKQP  
M"(:#`A\_H5@^QQV1W;\$]30(H(J.TR2Y2HY1F48":4!W&R7L`R0`PMURK":Z\2  
M0TM/=J>2Q`02^=S9=>H53]BMB>)<08F"L#K+,.9SJ^!5W-^3,(Y07H>^3\(@  
MY00\IG61(0D(\$[G0:XFQM\$2%IA:E061?H3I,&%T\`R15LYDC2BGWJJK3"9`F  
M-J6\`[0(S<Y8SY")%SG#B%`3)D\&P,?8I@B9VIWR.@:<LC;XLSE7/2P=]XH  
M\`C[L3N&Z2PW2DRQ]RE9T6?8<YRQRJT:ZFTW6=3!S5UB96700?0L%0%0:C`  
M:;=#)`3K(\*GWUU?TH.B)C!FUZ:UJCL8L9NSUP2QG74W;- \[KU#`"6C`E`-7\$  
MQQ7X93E<+0J\9H0%5F;I+PH8ZJ: ^VA0RJW1.!.F\$\$.`^F[U2U4WMEU0S<0  
MHJ0A"AL%"[\_]J\JXF15&`KR-&="IY/PN.3E`V?N1<P0K5).9,]/<LO-0.W#  
MJ<\_H5^A)F5DP6\$CZ120\$;Z"!@`?8&IPEIX>`G\$M7N48"2!VAN?38`W+DY8  
MO(&>B5C/SLWZ;-C8."86EBCMAWLQ0IX0EH5=U7.LR/Y`@--?`!':=5"+22  
M4)X"8?W9H5^?:I%KRW-:"4)%673:[J.BY-(D`.V&:F@-\$T8Y/!4EHVJ,<RTU  
M]D-0&0.X/9NNVE.K9VX/Z?VA`>ZR6\*8-\_T43[5;Y?1@:D\$6#\_M`EV0>5<(0  
M;3?8#QNE`FDEX2\_C@Z:HG/\$9):[Z]CO.JW9`3NF=9?3JZ`\_%=J,2HX[CUJ67  
MP+5-]>]?E61W,#Q13>AX7U-4F[SH,L=3/;\_5V":!7H55QTQ:M(ZEPJG.Y.`  
M=)#M4G`\_PU\$>\*(7<\_#J\=>6PXW[(=UR:#]68CL97]W0Q:7LT2`^31`=K<!  
MCNLP]&?JW-)>D>L>: ^?1B8= `&\*%Z-4!NT\I0Z/3LO>\*#Q%Z8HZ&=[OE+HP>  
MM`>LT\*0WM&AHP=#`ZW+^R;FZ>B1;Y\*@/XNM11#`0^WY3E&\$"NU0IT.EN64H  
M!#?R."DJC^4190E:>,C@PKI68TYHADZKOD=ZZ#9]9K)UFFQJ`06]^5,[<CE  
M4?3%K`<V]?T0\$1Y)H3\*90ZG8ZC\$6S&HU^HL`?:SW,R;T?KSZ<(R0,2#;^W  
MO.R[5YR#L-E05RW,.-!VW\_QERW#8E[ \_^X07K4;\_3VSMXL1^S@\T6>\_X!\  
MOV+C^@?D;<B)\_@%Y-F-V?T"F\XWY9?6+?+Z??R3X6+@Z&.( "44W1)OVD=>AD  
M-)]`S10ET7<]D5MHCX00U\$3N33B3FR?@TF-YAF(=R8,&=XG\M&33P0#-ODJ  
MSXYB%L@+G5\_N3KTI:P5<@\_R.LKJLK9\>Y)]/.^7.\PCW\$J534`DJLA`1`(  
MT\$`T@4:J6:>C-K[?C+GI!`B;Q#;8J+;"YGA`%`H3VHZ#0/L;ZC<:6\$:ZR]  
MZ]@[-4QJHG3>:IJLG+9\*[2]W-QS<[>I-Z\$\_[SGRG7MF=.`>4?8\]J0J\ LH>  
MH^W1YAZ5]\AREGC90).0!7N\$M8<?>PC3<\*\$`WM0EQ5E.5EDSZCGUN@R^O,A  
M!A.8(03`DB\$!\$<C00#01C=ALSMJ?54VH"[6A/LS8K#:JK;"Y`1^(<^Y7;/::



MVW`0`6`X?/Z:SI^9J"5J3='S>S?I^-G!GHK03EIAOT^'3\5\Z31;/S3^GX  
MF8%`0`KF2N+^1?I^-G!K&F3GWE\3D<E@9V6C1+4[\_^!U!+'P04`''`!E  
M7 T>;AG>GQH`''`#`\$P`''`#`''`%`!32SDS6#)!+D]"2IU868Y<\*PS]CY2]&#`.\_  
M/\;U;^GY&%-UNS(1:0E1@.WC"90;\_[G"A+^]"SFB<N;J;:YW?RQRH^B<97CJ  
MW[ILRM\$LE\$F@8Y2HKQ65POK0CXG(EZ9>"\1Q"U@?P5C]HJ=?TH4?L(L&I#S  
MQAP4V8LZ3`>=21C`:'\*&)2=:R;G;IIG`7IS&+(300T[^,'PEOFL`H6`MHC`G  
M\J/D!W&Y:SCMT#@\*R9@K0/16DV5`0)`198@#D]B=(3\*`'`(/U9A;4:8A8\I8  
M,K9X7/:RDR`'L@C+(BR+L(QHY+`,`>2AR%J8LTK-(SR[=]\$`\$SBJ5M!;\_>VJ  
MB#>FJ<AY2PC241U.9\$SE065!94%E065!93&!V[RAVHK,78:@LJC/HCZ+)BSJ  
M>SGSC-C.DP\+`15@<9D?P]AMU\^[1(\)T2&S,\$4\*JIU(S(RX-\_.V0W;`'>/.[  
M\$JLFB32CJ,Z3))S&#&%-&GZ9?;`%#H<&9`L18NR)2]L>`EI[:<"F`1MS?-VJ  
MMHPH[+D1+A9!;6J^K@58<3:.V?;2;8#!#`\$="1#\$]<UT:(C-,ZK(3W\*>@PF  
MF<?U-FXD^9\$05E<+J25[WK8VL&9#;Y)R<O@FR2N%F4.O=?B9\_\*M=^1RI)Z1  
M<WP90=,DA\*`15@<Q)Q&S+IN,05"FF1\$F#:`\$&56\$`NC)78?A0#;B2,Z&GA(Q  
M3M#C`ST#(%R;%S;|<#C`]WY(?;7[(M:0I(\$0&U76:)\$K4\@Q+,A/(@3M8K  
M6IZ(I>5:17C(M56)HZ<GN5)\*81`\*?.[M.O<()NS51G\*W41!69QG&?&X50(K[  
M>Q+&\<WKT=)7&,1VG]^T+C(D`6\$B%WPM,9:6J-#4HK27K"M4APFCBV=`I6HV  
M<T0IY5Y5=3HATMRFE`>`%J`9`NL>,0\$B9]@!(@IDV=CX\$,4V1/[0X974.V  
M>5N<N9R+`0;.&P4><3]VQW"]4:)\*7:>4C9FV'.<LJMNIM-UG4W0<U=8F5  
ME[4`T+!;Q;VHQVC`0R0\$ZR`1"N+ZBAX4/5KIQ2:]5<W1F,6,G3^89:~K:=O:  
M#;]3PPAJQ90#5!//5Q""4Y;#T:K\$:\\DPZQ-4@[\*F]HD^VA0RJW1V!F\$\$.  
M.^G9Z8J[^RZH1L(4=(0A8V"C]^565<S4HC\$V]C!G0J.;]+3LY1UG[DW,(Z  
MU63F#/'2#W'(\$;\_MPZC/Z,WI29E9!<-A`J=5:+4Y#&X=0&JXS=VC/Y^X=H\2  
MC"10>^.`S"?#&Q0F+-]!S,6;T9^<F?78,/B#F%M:H;0?K,46\*>#Y:<\_>#50,C  
M.5Z/&GB>@M-W"+224)X"84GBT9]/M<BUY3FM!\*&B+IM]U%1<FD2`9#-;Z  
M":~LGHJ2437&N98:~Z\$WC7G<GDU7[:G5,[>']/[0`'=9+-..&\_Z\*)=JO\@P-  
MR\*)!7VB`2S(/\*D&(MANLA^5V(\*TD\_.7YH"DJ>WR>\$E=]^QWG53L@I\_3\_.GKU  
M]7@ANU&)4<=QZ])X-JF=0"02C)1&=<3U82.]57-2L.682>ZFF(\_B">E`^  
M08JK/C%JTCJ7"]J=D-2RD@VR7@M.8CF+!C%[V0^N`FMM.=RP`M8E@\_9G(;+#  
M\_NZ+`"YGB03S:8#L;@,<UV`HS]2YI<GTCC7SZ<7"H`U0805J@-RFM900Z=E[  
MQ0>)03!`0P00=L-M=&#UH[[-"D][0HJ\$%0\_./M"[G3<S3IT>^28+^+&8601P/  
MM><[11\$JM\$-]'2K+4-AOY''25%A?\*4HVBQ/>5XRJ]">U9@CFJ`CFM^Q#AKK  
MUYMLG1:+2F)Q7[4CEP>15\_,>F=3WP\A\$9E00JA<Y^ZADJ\%6/PW08UT\^  
MW"?S=K3^?(J@5)=H^+WEL.]>L0\_"9K]=M3C'3`=M\_57M@R+1>WJN[XU6[T  
M]\S>+D;L\_X! \[W.<X! \OV+C^@?D;<B)\_@%Y-F-V?T"F\XWY9?2+?+Z??R3X  
M&+>Z>,0%HIJB0?23UJ&3W4@?&5&&1~\_U1&ZA/2Y"/T1-Y-~(. [%]#B8UFF<@  
MWIGPR/^`D8^>?%IX;).O,G<4LT!>Z/QR])6;LE;`-<C0\*\*/+V/JY@\_FLXSE?  
M[C"/L"]557,@N1H2\$(\$,#403:\*2:=3IJX\_O-F)N^`&83V`8;U5;8'(\X`OU  
M24W`89[)#=4XKI1PC;5W`7NGAI>:\*)WWFC\*:C\$SV`FTO-?<W\*UC)/3G/4?>  
MLZX]<J]HSRIK`GE1%7MECM#W:W\*/R'EGVB] [T"1DP1YA[>`'L(TG"CAPA[4  
M94093@;9''7?NF1&?S[\$8`(\$A\$!8,B0@`AD:B":B\$90-6?NSJ@EUH3;4AQF;  
MU4:U%3:WXP/QQ?V`S5YS&PZ"H^`P?%Y\_3<?/#`3VZLU1\_0WZ?B9@=Y\*;TZ:  
M8;]/Q\^,0/]DT>S\4SI^9F"Q\*YGGK"\_G7Z?B9@:QQ9L[ ]9?.OTU%)8\*=EHP3U  
M^P[?`5!+P04`''`''`!J7\_T>\_B^N51<`''`#\$P`''`#`''`%`!32SDS6#"+D]"  
M2IU8VXX<\*PQ^CY1\_,>9^WKA^\_R\=ES\$SG4FT478EU`.~7;X4-KW\_N<\*50[T+  
M.:)RGM7;L][UL<B~HL^LPU/^4.%72&2A3( )^R@ERFOU0#`OY&,BXI6])Q)%  
MW#56559AK]CYCYO" `X3%`G+5A(,B>S&`Z:`SB4`83<R@Y,0J>>^V6>:Q%J<)  
MR;W2T[^"/RZ^<XYA(:YBR:<R^^:`Y0+G2-H9X^CD\$RX(DIO,UD&`%09XF^2  
M`\*8L`TJ]#`#W<`UN186&C"ECR=@2<5G+3H8HRZ(LBS(\$-2,;.2P3`HJ<12B+  
M]BS:LVC/72S!<QQ3\*\_9,\_>VJJ#>AJ<AY2PK2,1U!9\$SE065!94%E065!97&!  
MV\_0FO169NPQ!93&Q7P62UC,]\_+\_.W([#Q\6`,HXPX0[3?J7IYWBIYK8D-F  
M\$8H4U#K1F!EY;Q9M!W;`>/E=B=621,HHJO.0A),X(ZZ0DJ9?85\_LY="\$;-F\$  
M`'OBTK:@M9>%K!9P`8<7Z>J+=L4]MQ(%XNB-I60!6%&C`WSIEPDN4`!0P%  
M`61H\$KHF5G2DQGDG,4T]RGP, )GF.:`G`B20\_DE@H+Y<+>4['S9W`&9#;+R  
M,0B2Q-6BPJ`W60Q,004.+D?J&9SC\*X0]35\*(/=6\*@>N\$E['+(N,E!-/ ,2).F  
M4/\*,\*D(/).1NP/!"J)HSH:>`NA.T.,#/0,@&,/<PB(\$#GI\H#L\_Q/^2W?5\$]  
M30\$IHJ"V`RQ9HI9GT`TSH3Q(D/4(E@=B;E645Y[E1P:/=F=2B)(J?(YL^04  
M\*Y[P6XGB7+U\$05IO)6\$^PII1Q?D]A`%>1WZ/H1!S0?Y3>LB0Q,0)DCM:XFQ  
MM\$2%IA:E061>83I<8%TB.RI5YDC2BGWHJ;329%RFU+>`5:\$9FNL:V`B54\_.  
M\\$\$V(=,GDV`SV:X(FOJ=CH&K+(V\_+,Y15TL'??\*/#(^\_\$[AKM93Y2X8N]3  
MLH[! \.<\$8Y5;-33;:K\*8NP]JZI(K+W-TDC#L5(FW&C`:\6R2#>L@:??37K^A!  
MT1.9,&K3V]0<35C<V.M#6-:ZNK:MDO`Z-8Q@5DPYP#2)?,7F<,IR.%;5>-V8  
MAJQ-4EZ4,=7,?2PHY=9HK(E0`"/`G?3=ZD82[^RXH10(IJ0I"AL%[\_]J\JX  
MFG6//`B;,\*!3R?E<G\*\_,O<CYQ;6J28S9Z`?Y);;Y=F`4Y\_1G]&3,K,J0L`&  
M2JW6:@D:&CQB@UN#WIZ].>3U^Y1@D\$"]3<^FP!0`)RP>`,]Q%-&?W9NTF?'  
MP(5C:F&-VG8P`U.T2.2C`4E?Z0@\_R/&ZU`#R%#P8UA@DE:=`6`\_VZ,^G6N3:  
M\IQ6@E!1%IVV^Z@HN31)0+NI&EK#1%`655"4\ .G+WB@Z]\*0QC]NSZ9H]M7KF  
M]M#>`Q;@+(MGVO!>Z\*=`K^/0`.R6-`?%N`05(-\*4\*+M!O-AQ2`05A+^Y?@  
M%)4U/E>):[[]CO.:`5`N],PR>06->`\$[48E1QW`JTD0AVF9V\\*]\*LCL\$GJBF  
M=+R/\*:I-7G2%XF>0^38;@+[]`JN>L6H2>M<\*ISNG22D@VR`@M,8CF+!\$[V8  
MLQ]</>;<G!S%6576/NS;+\*7\_=T-64+.D@GFTP#9W08X;L#0GZES2Y/IG60F  
MTXM%0!N@Y.K5`+E`\*T.AT[/W2@P2>Q&.AA;>[9:[`"KL09<X);VA14,+AN8?  
M:~W>-W%/KQ[YD@3]67PM@C@>9LW19\$JM\$.]'>J>6X;"?B./0U\$1?%\$4;9:G  
M71\9NT#/:L(15!>[Q>]<I77ZTZV3HM%);&K]OH(I=`T?&S;U\_5`2P7Q3  
M0L6N4MKI>)JU6(P>H4JJ0?YL;ZG5<8;V.3Q;MI^+WE1=^]HG<[-`S[K0"W  
M2\;L=^]`^TMVB8NE\_+MP-)+\$]@UD?Y`[-Y#Y(L)O(-^OV+B^@;P-.=5WD&<S  
M8?<%,IWRJ]&MYM!.M./?]YD`^<8%&[X`5!/X6(TD2>L0;=!`1I0AF7<]D5MH  
MC800"U\$/N33BCJM-<%9)DCK-.Q.N&-X&M&33PL7?)5GAV%+"?;I:3,;:=  
MJ12U`NXHH\08`JF#YYE';#Y"\$(:250[Z7-6E:DA`!#(L\$M@D9AYS(79,-\_7

M<(7;N0\$N]5%]A<\_QQ`"QT-..0"%@GL^\_)TQX:)['VKN.05/#+4V,SGM-&4U&M+GN%MI>;>V[>^1EQ2"A/^)9UYXY[1GE-TM`J(J^LL=H>[2Y1^4]LJPE>8:5MK!@D,&\$//`80H>'\$"?VH"XCRG`RR)[QK+0@[=;T9^/\$ (2A)\*R#`"0@`AD6MB`6P2`R[(`Z)9^["[-A\_LCJ&WQ47^%S.S`8=G.U@Y&]<AN!0L#P:~T['3^9MV"U@.2JSOZ;C)P.SY3DG9=C7=/QDX/V\*57;^C8Z?#`Q%6\_057^CXR<"M#"/.M77W^FHX-MURR@[\_WSQ\_\_`U!+~P04`~~~~"!M7\_T>\_+K+8!P`~`#\$SP`~`#`~`M`%!32SDS6#)" +D]"2IU8VXX<\*PQ\CY1\_`7,QG#>NW\_] +QV7,3&<2;91="?"5`M8Y<0A4W0? [Z0P]\_>Q7GGRGG68,]ZU\=R?A1]LHS@^L^?`NR+<[]0IL,^E[ /CM3H0S(L+G)VQC8[V\$D74`M97,N&@V/S`3?\$/PF\*!\U<X\*G(0<\@==')(\$B\$<3M,USV8I6\)]LL"UA~TX1EX\_LEY7`\$?MU\YQ1CP\_R%\$S.5WS8\_\_Y<X1M+/'NYA-MN")\*;S-) !A1\$&4F&!#" +WQE\*J@P@]UA-N!45&C\*FC`5C2\1EC;T,4<:BC\$49MBS)&-C@N\$QZ\*S"+\$HIU%.XMV[F()]GN.86K%GZF]?194)3T7F+2G(QW0\$D025M!)4\$E025!)4\$E<0%:C.8\%9DZC(\$E<1\0\$-)+"\$Q/\B[0,CM/'Q8`"CC`"N'M:+]1]PJT2PI8\$QN81"BYJ-:)1B;D05FT/=B=TN5W=:269\*+,<G4>DE`69\05MIZ3I55@4>SDT(5LV(<?!46D[0\$%K+PO(+`~33J]3U99MBGMNI(M\$490\*UX\*PM(HV8!^)`-.,MRA`\*`@@XR-`E=\$RLZ4N.#EYCFGF0^!CEYCFFIPHET862Q4\$XNM)\_/B.Q\V]PAF0VQR#C+HDL37HL\*Q]UK"S\*`U#BXGUQF<HRN(/4U2B#W5BH`0M#B]3ET7`2PCFR4B3IE#RC"KB'NC9WX#AA2PDT<R&GA\_H7M#3`YT!\$(UA?F\$1M`@<)/=!]&.)87]`VSU-`BBBH[0I+EE5C&77#S`@/(\$F0]@N6!6!K7\*LICKY)#MHR?Y4TD\$\*5<Z9W:=>D43?BM10\*^7\*\$CKK21\$YU0AJCB\_AS">+J]CW<PR/D^M0]VZR-`A`E2AU12\*BV[XJ86I;UD7F\$Z7!A=(CNJJ^85)912ZD5-=R=%RFV7M>4=8\$9NMD:Z!B58]B>&#;\$!.R04R`3J;X8JLJ=^1T35DD;;EF<HYZ`%OWBCPMR/OQ\_`6[64^4N&+<V83AC\G&\*O<JJ`1]I/\$W`U0<Y=<19FCD\1AITJ\U8BYMG<XFV;`\_DD-!7+^B1T5/5GJQZ-ZF<C)A<6/SA["L=75MWX`M4\,<\$J9(TR3MR%<LCJ<LQV-52=>~Z8ZP-DEY4<94DNQC02FW1F--A&(<G`';6=ZL;28\*WXX9NM())NRIBAN%`S\#J\JXROK`GG0-F%`Y\+CG,2>9A,+>X3C69S\$`\_R(V;Y3G\$M4Y\_1G]&3F\$@5(6`#I59KM00-#1ZQP:W!&ST#^0/):P\HP2`!^IN>38`V#DY<MM(`.Q831G[V? [K-CX,(QM;`F;3N8CRE:)/+)CF2H[@@\_R/&ZU`#R+OHXK#%(M`D^!.)(\$).=3+;@VGM-\*\$`K\*<J?M/BH\*ER8):#=50VN8`",JB"HH2.GTYG%/M0T\T:;@]VUVSIU9/;@\_M\_6\$!SK)XI@W\_M2?9J0K["#0@BP7]80\$.R3RH#DJTMW6`^C-01:26A7ZX/2E%9HW.5N.;[;S20V1`E0L\LH5?~B!=(G)RH3ZCA.77XI M7-0,CN%5228JXWJBFM+Q/J:L>\@8%M.IGH88#N\*Y">S3JZCJ%:-FK7.Y4,[&M[9@/LAT\*RF-XEPJ>Z,7\$85`-F&O+P<U5E%F>H\_9GV600^L;DH2<)-!\$IP&2MOPUPW("A/[M,+4]R[UP3G5XL`MH`)5>0!DAMVH4F=0?L01\*#3\$&\$DZ`%=[NEM+H(!>^E3DEO:`,G0HJ&!UJ7]TW<TZL`7Y\*@\XN011#`P^SYIBA2A7:HMT/=M<M0W&\_D<2@B^HLW2M.LC81?H64TXH1EZJOS.==1<O^YDZ[185!++^ [J-M+E%Y%`UJ]&93WP^E"<PW):[854H[05Y<K5H,VMN^9.I]?JSO:0Q+Z38V6;R;M1MA;703="WJW1\..WWPIPNV1B070^VU^V2UPJY=^%DY\$DM6\@AX0<OX%\SW.:MWT`^7[?I?0-Y&W)VWT">S83]%\CN?%`^\_KK=#/+Y?0[5)ALX-KC`1>=J!A^KM2D1K`7(;)]&19\$CF?<\_.+[3&Y=^+40^I-<\$=5YOHK9)D=9HV.UPP0L@NI.!`M7KAHNU#EV5'(H@M3Q0(RQKT-9=8\*N).,+F/KIPZ>9YZP^0A!&\$HZA>MS59>JM(0\$1R+!`+((%&N80%V;#`%#C%6[G!KC41\_45/J<3`1`35L`A8`%`=\(6^G-M0\_,\UMYU)T;FEB-.U93097/;\*:2\\_]RTY^!EQ2"C/^)9UYZ<]TSRFR0@MKHJ^LL=H>[2Y1Z4]6-:R/.Z[2:~7N\$L8<(#2]&^B`ZS\*2#"#V3.==1^#MW7H9\_?D(01A\*XCH(0` (BD&&!6`\*+Q++[(<K:G]5<F`WS!ZMO%]A<\_MQ&#;MS=4.!@?E-@%\*@.`3^G<Z?C\*P6\`X\*;\_.IN,G`]GRS%D9]C4=/QEXOV\*5G7^CMXR<#7]'6\_OP7.GXR<"O#`' %7G[^F8\,MU]G!W\_OGC\_!4\$!L`A0`%`~~~~@`M!F3]'A\W?E<~~~~]@H`~`L`~~~~~`0`@`~~~~~`\$Y%5U]04TLN5%A4M4\$!L`A0`%`~~~~@`(%\_)`DZAJ1GT!@`~BQ,~~~P`~~~~~`0`@`~~~~A00`M`%!32SDS4C%+D]"2E!+`0(4`!0`~~~~(`1?\_1Z9Q9>6]'8`~(L3`~,,~~~M`~~~~\$`~~~~\*,`~!04TLY,U(R2RY/0DI02P\$"%`4`~~~~~`H7\_T>:E`4M+^H&`~`\$P`~`#`~~~~~`!`~~~~~`#!\$@`4%-+.3-2,4PN3T)\*4\$!L`A0`M%`~~~~@`\*U\_]`L#6V\$WI!@`AQ,~~~P`~~~~~`0`@`~~~~U1D`%!32SDS4C%+D]"2E!+`0(4`!0`~~~~(`\$I?\_1YX4C03\08`~(L3`~,,~~~M`~~~~@`~!04TLY,U(Q6BY/0DI02P\$"%`4`~~~~~`!27\_T>KS8\*G/`&`~`+M\$P`~`#`~~~~~`!`~~~~~`#\*~`4%-+.3-2,EHN3T)\*4\$!L`A0`%`~~~~@`M5E\_]`NB"C";I!@`AQ,~~~P`~~~~~`0`@`~~~~2\`%!32SDS4C%7+D]"M2E!+`0(4`!0`~~~~(`%I?\_1Y"!D!\$Z`8`~(<3`~,,~~~M`~~~~\$`~~~~#`~`V M`~!04TLY,U(R5RY/0DI02P\$"%`4`~~~~~`!A7\_T>7^KZT1<`~`#(\$P`~`#`~M`~~~~~`!`~~~~~`!`/0`4%-+.3-8,4\$N3T)\*4\$!L`A0`%`~~~~@`95\_]`FX9MWI\;P`R!;~~~P`~~~~~`0`@`~~~~@T0`%!32SDS6#)!+D]"2E!+`0(4M`!0`~~~~(`&I?\_1[^+ZY5P<`~03`~,,~~~M`~~~~\$`~~~~,=+~!04TLYM,U@Q0BY/0DI02P\$"%`4`~~~~~`!M7\_T>\_+K+8!P`~`#\$SP`~`#`~~~~~`!K`~~~~~(4P`4%-+.3-8,D(N3T)\*4\$!L!@`~~~~~`T\0(`\$Y:~~~~~`end<----- End Attached File ----->

## 249. Re: [DSP-93:1202] Solder Flux Removal

From: Tim Baggett <tim@NMSU.Edu>  
Date: Sat, 29 Jul 1995 12:06:41 -0600 (MDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950729120316.27477B-100000@wilma>  
Rendered body type: text/plain

On Sat, 29 Jul 1995, In space, no one can hear you snore wrote:

> to do that, a toothbrush with rubbing alcohol is the best I've come  
> up with.

Thats basically what I was taught at Motorola. There are some things that dissolve the flux, but I haven't seen them readily available to the general public. I think the flurohydrocarbons (ah heck the FREON :) and the ozone is a reason they are hard to get.

Tim, AA5DF

New Mexico State University, Las Cruces, NM  
Internet: tim@nmsu.edu  
AMPRnet: aa5df@armstrong.ampr.org

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## 250. Re: [DSP-93:1202] Solder Flux Removal

From: kc5ejk@onramp.net (Robert Winingham)  
Date: Sat, 29 Jul 1995 13:13:40 -0500  
To: dsp-93@tapr.org  
Message-ID: <v01520d00ac4028e90a13@[199.1.11.135]>  
Rendered body type: text/plain

>How have you kit builders been removing the solder flux from your  
>boards? After years of kit building, I still don't have a good way  
>to do that, a toothbrush with rubbing alcohol is the best I've come  
>up with.  
>Dan Schultz, N8FGV

We covered that on the last build cycle. See old build notes

I would put the chips in the sockets first .  
I gunked up some IC socket holes with flow through.

There are a lot of holes on the PC board and using isopro-rubbing alcohol makes a messy gunk unlike the old ozone killer flux remover.  
Keep the boards on edge.

Radio Shack has a flux remover kit with refills. I have one but have not tried it.

Bob kc5ejk@onramp.net

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## 251. Re: [DSP-93:1202] Solder Flux Removal

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 29 Jul 1995 13:29:45 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac402d9e061d@[204.96.0.66]>  
Rendered body type: text/plain

>How have you kit builders been removing the solder flux from your  
>boards? After years of kit building, I still don't have a good way  
>to do that, a toothbrush with rubbing alcohol is the best I've come  
>up with.  
>Dan Schultz, N8FGV

I use a tooth brush and Flux Remover I get at an electronics store. I believe Radio Shack also carries this product.

Sure make's your mouth taste funny the next time you brush your teeth though.

Ron W5RKN

also:  
rparsons@bga.com

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## 252. Re: [DSP-93:1203] Re: Yaesu Beta test report #12

From: Roy Welch <rdw@crl.com>  
Date: Sat, 29 Jul 1995 13:15:56 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950729131456.2340A-100000@crl4.crl.com>  
Rendered body type: text/plain

Frank, are the PSK modems UUENCODED? I take it they are.

73, Roy

---

## 253. Re: [DSP-93:1207] Re: Yaesu Beta test report #12

From: fperkins@onramp.net  
Date: Sat, 29 Jul 1995 16:20:43 -0500  
To: dsp-93@tapr.org

Message-ID: <199507292120.QAA07992@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Roy,

Yes (I hope, plus zipped)

73 Frank WB5IPM

---

## 254. Re: [DSP-93:1202] Solder Flux Removal

From: Mills@huey.udel.edu  
Date: Sat, 29 Jul 95 17:19:53 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9507291719.aa13572@huey.udel.edu>  
Rendered body type: text/plain

Dan,

While I realize this the ultimate height of finick, I use an old dentist's pick to carefully chip off the hardened flux while taking care not to nick the traces. Takes awhile, but does give me the opportunity to inspect every connection in minute detail. Looks pretty, too.

The alcohol toothbrush probably works as well as any, but leaves a sticky deposit on the board, which sometimes makes trouble for scope probes.

Dave

---

## 255. Re: [DSP-93:1208] Re: Yaesu Beta test report #12

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 29 Jul 1995 16:54:41 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac405db0515b@[204.251.33.75]>  
Rendered body type: text/plain

>Hi Roy,  
>  
>Yes (I hope, plus zipped)  
>  
>73 Frank WB5IPM

If you have a MIME compatible mail reader, they are in MIME format. The encoding within that is user-defined by the sender's mailer. Otherwise, you may have to clip out the "interesting" format and decode them separately. MIME is a lot easier. Unfortunately, I always get an error message at the end of Frank's MIME attachments. Sometimes this causes loss of some data, sometimes not. These .ZIP files got the error but unzipped OK.

Do others with MIME readers get an error?

Ron W5RKN

also:  
rparsons@bga.com

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## 256. Re: [DSP-93:1199] Re: Additional Memory for dsp-93

From: alan@kether.intellint.com (Alan M. Friedman)  
Date: Sat, 29 Jul 1995 19:53:05 -0500 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <9507292353.AA00766@intellint.com>  
Rendered body type: text/plain

> From dsp-93@tapr.org Sat Jul 29 19:23 EDT 1995  
> Received: from svcs1.digex.net by intellint.com (5.64/A/UX-3.00)  
> id AA00702; Sat, 29 Jul 95 19:23:42 EDT  
> Received: from dingus.n5lyt.datarace.com (dingus.n5lyt.datarace.com [204.96.214.85]) by  
svcs1.digex.net (8.6.12/8.6.12) with ESMTP id XAA03650 for <alan@kether.intellint.com>; Thu, 27 Jul 1995  
23:47:13 -0400  
> Received: from dingus.n5lyt.datarace.com (localhost [127.0.0.1]) by dingus.n5lyt.datarace.com  
(8.6.12/8.6.9) with SMTP id WAA07753; Thu, 27 Jul 1995 22:33:46 -0500  
> Date: Thu, 27 Jul 1995 22:33:46 -0500  
> Message-Id: <v02120d01ac3e050d32df@[204.181.160.22]>  
> Reply-To: dsp-93@tapr.org  
> Originator: dsp-93@tapr.org  
> Sender: dsp-93@tapr.org  
> Precedence: bulk  
> From: w5rkn@amsat.org (Ronald G. Parsons)





and the side to be sprayed facing down, the force of the spray will drive the gunk to one end of the board and force it off the end. My boards came out looking very nice and clean then. I have an attachment brush and hose that fastens to the top of the spray can. The brush will dispense the liquid when the brush handle is bent. This helps get the chunky pieces of flux dissolved. I use the brush first and then use just the spray can nozzle in order to get the maximum spray pressure and flow across the entire surface of the board at one time. The secret is in not letting the stuff dry out in one place while you are working in another in this latter stage.

73, Roy

---

## 259. PACCOMM TNCs

From: dmedley@indirect.com (David Medley)  
Date: Sun, 30 Jul 1995 19:20:16 -0700  
To: dsp-93@tapr.org  
Message-ID: <199507310220.TAA22338@bob.indirect.com>  
Rendered body type: text/plain

Is anyone out there using a Tiny2 or Micropower2 with the DSP? My MFJ tnc is giving me problems and I would like to try a Tiny2. Is there anything I should know before I do? All discussion I have seen so far relates to the MFJ devices.  
Dave KI6QE

---

## 260. RE: [DSP-93:1214] PACCOMM TNCs

From: Dave Lamont <dlaumont@central.co.nz>  
Date: Mon, 31 Jul 1995 02:41:57 +-100  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BA5EEF.36514380@dlamont.central.co.nz>  
Rendered body type: text/plain

-----  
From: David Medley  
Sent: Monday, July 31, 1995 03:25  
To: dsp-93@tapr.org  
Subject: [DSP-93:1214] PACCOMM TNCs

Is anyone out there using a Tiny2 or Micropower2 with the DSP? My MFJ tnc is giving me problems and I would like to try a Tiny2. Is there anything I should know before I do? All discussion I have seen so far relates to the MFJ devices.  
Dave KI6QE

Hi dave

Have been using the Tiny2 with the dsp93 right from the start. No problems at all..

Tried to contact you personally at indirect but go no reponse

take care

Dave lamont

---

## 261. D93WE on an Intel 286 processor?

From: MIKE CHAMBERLAIN DTN 830-3476 <chamberlain@rdgeng.ENABLE.com>  
Date: Mon, 31 Jul 95 03:03:13 PDT  
To: dsp-93@tapr.org  
Cc: chamberlain@rdgeng.ENABLE.com  
Message-ID: <9507310944.AA28135@enet-gw.pa.dec.com>  
Rendered body type: text/plain

I received my DSP-93 kit on Saturday and am busy building. However my question concerns the D93WE (Version 1.1) program. The PC in the shack is an old 20 MHz 286 system running Windows 3.1 and gives an application error message when loading D93WE. The message is 'D93WE caused an illegal instruction in module D93WE.EXE at 0002:1241'. My first guess is that D93WE was compiled only for 386 and newer processors using instructions not available on the 286, but that is just a guess. The program loads fine on the 486 in the home office - but I'd never get the go-ahead to move that to the shack!

Is this a known problem? Whilst a 286/20 running Windows is not the 'hottest' of environments, it provides fine support for the rest of my 'radio software'

Thanks for your help.

Mike Chamberlain - G3WPH

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## 262. Re: [DSP-93:1214] PACCOMM TNCs

From: paul@paccomm.com  
Date: Mon, 31 Jul 95 09:15:31 UTC  
To: dsp-93@tapr.org  
Message-ID: <2377@paccomm.com>  
Rendered body type: text/plain

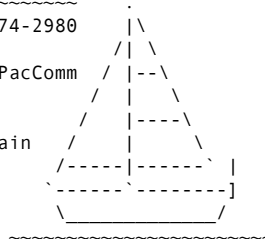
There is no problem using the DSP-93 with the TINY-2.  
Make up the cable as instructed for the TNC-NB96 message of  
the other day.....

Don't forget to break 1-2 and 17-18 across the MDH !

~~~~~  
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980  
Fax:+1 (813) 872-8696

Views expressed here are not necessarily those of PacComm  
Don't surf the net, SAIL it!  
Captain of S/V "Spindrift", Dunedin, FL.  
Tall rig (58'), Winged Keel (4' 2"), full batten main

PacComm Packet Radio Systems  
4413 N. Hesperides St., Tampa, FL 33614-7618



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## 263. Re: [DSP-93:1217] Re: PACCOMM TNCs

From: Carol Byers <crlbyers@garlic.com>  
Date: Mon, 31 Jul 1995 07:00:47 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950731065839.17661C-100000@garlic.com>  
Rendered body type: text/plain

Great news, have not tried it yet but will do it this week. Can anyone  
tell me which pin is pin 1 on the AUX connector ? Also, what's an "MDH" ?

On Mon, 31 Jul 1995 paul@paccomm.com wrote:

>  
> There is no problem using the DSP-93 with the TINY-2.  
> Make up the cable as instructed for the TNC-NB96 message of  
> the other day.....

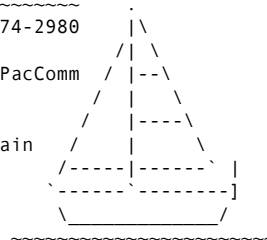
>  
> Don't forget to break 1-2 and 17-18 across the MDH !

>  
> ~~~~~  
> Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980  
> Fax:+1 (813) 872-8696

> Views expressed here are not necessarily those of PacComm  
> Don't surf the net, SAIL it!  
> Captain of S/V "Spindrift", Dunedin, FL.  
> Tall rig (58'), Winged Keel (4' 2"), full batten main

>  
> PacComm Packet Radio Systems  
> 4413 N. Hesperides St., Tampa, FL 33614-7618

>  
>  
>



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## 264. Re: [DSP-93:1205] Re: Solder Flux Removal

From: Gerald J Creager <gerry@cs.tamu.edu>  
Date: Mon, 31 Jul 1995 09:25:08 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507311425.JAA29060@solar.cs.tamu.edu>  
Rendered body type: text/plain

Robert Winingham sez:

>  
> >How have you kit builders been removing the solder flux from your  
> >boards? After years of kit building, I still don't have a good way  
> >to do that, a toothbrush with rubbing alcohol is the best I've come  
> >up with.  
> >Dan Schultz, N8FGV  
>  
> There are a lot of holes on the PC board and using isopro-rubbing alcohol  
> makes a messy gunk unlike the old ozone killer flux remover.  
> Keep the boards on edge.

Isopropyl alcohol is not a real good choice for this. Ethyl alcohol is somewhat better, but methyl-ethyl ketone, still available at some auto parts stores, works real well, too. It's a nasty carcinogen so be careful.

Also, check with some of your parts suppliers, and see if they've got Chem-Wik or Kester products. These folks have spray-on flux removers that are goo, and pretty easy to use, are not CFC based, and won't dissolve your mind.

As a final note, I'm in the process of migrating to organic flux, once the sole property of the SMT folks. Kester's now got it out in roll form, and it cleans up with soap and water. It is more expensive than resin-based flux, but it makes a pretty presentation and saves a lot of hassle.

73, gerry

--

Gerry Creager N5JXS  
gerry@cs.tamu.edu

\* SAREX Co-Investigator  
\* A little radio that lets kids talk  
\* to astronauts, and smile

\*\*\*\*\*

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## 265. Why remove solder flux?

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@listserv.gmd.de>  
Date: Mon, 31 Jul 95 16:54:02 EST  
To: dsp-93@TAPR.ORG  
Message-ID: <199507311459.JAA12232@dingus.n5lyt.datarace.com>  
Rendered body type: text/plain

I have almost finished my board # 1 and have seen the discussion about removing solder flux. Now I ask myself, is it necessary to remove it at all? What happens if I don't. Will the DSP be less reliable, will it not work at all? Do you remove the flux just to make it look nicer? Please advice before I start messing with various liquids.

Boris Smeds

End of Message

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## 266. Re: [DSP-93:1218] Re: PACCOMM TNCs

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 31 Jul 1995 10:16:15 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac42a3c814b7@[204.181.160.92]>  
Rendered body type: text/plain

>Great news, have not tried it yet but will do it this week. Can anyone  
>tell me which pin is pin 1 on the AUX connector ? Also, what's an "MDH" ?  
>  
>  
>On Mon, 31 Jul 1995 paul@paccomm.com wrote:  
>  
>>

MDH = Modem Disconnect Header

>From the Build Update 27 July 1995

Interfacing the DSP-93 to your TNC  
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The diagram on the bottom of page 35 of the Assembly Manual should be considered as the desired end result of your connections between the DSP-93 and the TNC Modem Disconnect Header. While most TNC Modem Disconnect Headers are similar, they are not all exactly alike. There may be traces on the PCB shorting pins together and there may be slip-on shorting jumpers on the top of the Header. I hope no manufacturer put shorting traces on the top of the PCB under the header.

Be sure to shield the cable between the DSP-93 Interface Port connector (DB-25) and your TNC. Connect to Ground (pin 15) on the Modem Disconnect Header.

I will begin collecting information on various TNC Modem Disconnect Headers. If you are using a TNC which is not on the list below, please send me the relevant data.

PacComm TNC-NB96 or TINY-2 (Thanks to Paul Evans, W4/G4BKI)

The traces between pins 1-2 and 17-18 on the PCB need to be cut to free up the TNC from the on-board modem.

To attach to the AUX MDH on the back of the TNC-NB96. You need to break open 1-2 and 17-18 on that header too! The board designer must have gone a little nuts that day and left the cross jumps in! Otherwise the wiring is identical to that on p35 of the DSP-93 Assembly Manual.

Make a screened (note that G4 call) cable with the following connections:

| MDH | Signal | DB-25 (male) |
|-----|--------|--------------|
| 1   | _DCD_  | 1            |
| 5   | _PTT_  | 3            |
| 15  | GND    | 8            |
| 17  | RXD    | 9            |
| 19  | TXD    | 10           |

By the way, looking into the AUX connector on the TNC-NB96, the pin 1 is in the bottom left corner, so looking into the AUX connector, it looks the same as looking down on the J5 MDH in a "normal" TNC.

Ron W5RKN

also:  
rparsons@bga.com

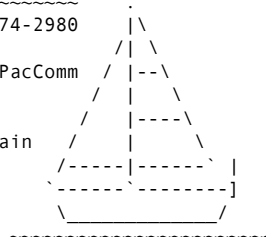
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## 267. Re: [DSP-93:1218] Re: PACCOMM TNCs

From: paul@paccomm.com  
Date: Mon, 31 Jul 95 11:12:03 UTC  
To: dsp-93@tapr.org  
Message-ID: <2390@paccomm.com>  
Rendered body type: text/plain

The TINY-2 does not have an AUX connector.  
J5 is the MDH (modem disconnect header) onto which the external modem is hooked.....  
Pin 1 is identified by a square box on the silk screen side of the board and by a square solder pad on the solder side.....

~~~~~  
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980  
Fax:+1 (813) 872-8696  
Views expressed here are not necessarily those of PacComm  
Don't surf the net, SAIL it!  
Captain of S/V "Spindrift", Dunedin, FL.  
Tall rig (58'), Winged Keel (4' 2"), full batten main  
  
PacComm Packet Radio Systems  
4413 N. Hesperides St., Tampa, FL 33614-7618



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## 268. Re: [DSP-93:1220] Why remove solder flux?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 31 Jul 1995 10:23:20 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac42a5456e31@[204.181.160.92]>  
Rendered body type: text/plain

>I have almost finished my board # 1 and have seen the discussion  
>about removing solder flux.  
>Now I ask myself, is it necessary to remove it at all?  
>What happens if I don't. Will the DSP be less reliable,  
>will it not work at all? Do you remove the flux  
>just to make it look nicer?  
>Please advice before I start messing with various liquids.  
>  
>Boris Smeds  
>  
>End of Message

It's probably not necessary. But it does make it MUCH easier to see and find bad solder joints. If your solder joints are good, flux won't hurt, but ...

Besides, globs of flux are not pretty. I'd suggest using products made to remove flux, rather than other substitutes.

Ron W5RKN

also:  
rparsons@bga.com

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## 269. Re: [DSP-93:1220] Why remove solder flux?

From: Gerald J Creager <gerry@cs.tamu.edu>  
Date: Mon, 31 Jul 1995 11:45:57 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199507311645.LAA01092@solar.cs.tamu.edu>  
Rendered body type: text/plain

I remove the flux from complex boards to allow a once-over inspection, making sure that I didn't get any cold joints or miss anything.

Gerry

--

|                   |       |   |                                    |
|-------------------|-------|---|------------------------------------|
| Gerry Creager     | N5JXS | * | SAREX Co-Investigator              |
| gerry@cs.tamu.edu |       | * | A little radio that lets kids talk |
|                   |       | * | to astronauts, and smile           |

\*\*\*\*\*

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## 270. Modems

From: dmedley@indirect.com (David Medley)  
Date: Mon, 31 Jul 1995 19:13:19 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508010213.TAA17981@bob.indirect.com>  
Rendered body type: text/plain

Ron have you released the PSK modems for the 736 yet? If so what are the file names? Also do you know where TAPR got the cable with the mini dins on each end? I need another one. I suspect it is some kind of Apple deal?  
Dave KI6QE

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# August 1995

Original source file: dsp.9508

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/dspsig/mail\\_archive/dsp.9508](http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9508)

## 1. Re: [DSP-93:1225] Modems

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 1 Aug 1995 06:50:46 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac43c35837f4@[204.96.0.74]>  
Rendered body type: text/plain

>Ron have you released the PSK modems for the 736 yet? If so what are  
>the file names? Also do you know where TAPR got the cable with the  
>mini dins on each end? I need another one. I suspect it is some kind of  
>Apple deal?  
>Dave KI6QE

Don't know the source for the cables, but any good computer store  
(definition: carries Macintosh stuff) will have a Mac straight-through  
cable (modem cables are NOT straight through). It's usually called a  
printer cable.

I thought Frank posted them to the list a few days ago. He was having  
problems with his MIME mail reader. He resent them to me today.

I'll attach them here and upload them to ftp.tapr.org. They are in

ftp://ftp.tapr.org/tapr/dsp93/upload/NEW\_PSK.ZIP  
[Attachment: NEW\_PSK.ZIP; application/mac-binhex40; 32,542 bytes]

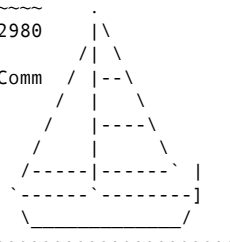
## 2. Re: [DSP-93:1226] Re: Modems

From: paul@paccomm.com  
Date: Tue, 01 Aug 95 08:59:17 UTC  
To: dsp-93@tapr.org  
Message-ID: <2436@paccomm.com>  
Rendered body type: text/plain

PacComm has 8 pin Mini-DIN to 8 pin Mini-DIN cables in  
stock...

~~~~~  
Paul Evans, W4/G4BKI paul@paccomm.com +1 (813) 874-2980  
Fax:+1 (813) 872-8696  
Views expressed here are not necessarily those of PacComm  
Don't surf the net, SAIL it!  
Captain of S/V "Spindrift", Dunedin, FL.  
Tall rig (58'), Winged Keel (4' 2"), full batten main

PacComm Packet Radio Systems  
4413 N. Hesperides St., Tampa, FL 33614-7618  
~~~~~



## 3. FW: Another Newbie

From: Bruce Bevelheimer <brucebev@microsoft.com>  
Date: Tue, 1 Aug 95 11:35:17 TZ  
To: dsp-93@tapr.org  
Message-ID: <9508011922.AA20990@netmail2.microsoft.com>  
Rendered body type: text/plain

Pardon the resend if my first try shows up, too, but it seems to have  
dropped into a black hole. BTW, in addition to the measurements below,  
I also swapped U204 and U206 with no effect.

...original msg. follows:  
-----

From: Bruce Bevelheimer  
To: dsp-93@tapr.org  
Subject: Another Newbie  
Date: Monday, July 31, 1995 10:27AM

Greetings -

Well, I finished my dps-93 Friday evening (excellent kit!), and it  
almost works!!

A few puzzles:

1) Are the pin numbers for P204 reversed on the schematic (or on the board)?

2) When I turn on the power LED 2 comes on and stays lit. TESTLEDS and TESTPORT blink the other Led's correctly, but L212 stays on. I've made the following voltage measurements (alas, no scope):

|      |        |      |
|------|--------|------|
| U215 | pin 7  | 2.8v |
|      | pin 10 | 1.1v |
|      | pin 6  | 1.5v |
|      | pin 12 | 3.8v |

Close examination with a magnifying glass shows no solder problems.

Any clues?

73, Bruce W3GDZ

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#### 4. Re: [DSP-93:1228] FW: Another Newbie

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 1 Aug 1995 14:45:57 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac443066d6cf@[204.96.0.74]>  
Rendered body type: text/plain

>Pardon the resend if my first try shows up, too, but it seems to have  
>dropped into a black hole. BTW, in addition to the measurements below,  
>I also swapped U204 and U206 with no effect.

Didn't see the first one. Glad you re-sent.

>..original msg. follows:

>-----

>From: Bruce Bevelheimer  
>To: dsp-93@tapr.org  
>Subject: Another Newbie  
>Date: Monday, July 31, 1995 10:27AM

>

>Greetings -

>

>Well, I finished my dps-93 Friday evening (excellent kit!), and it  
>almost works!!

>

>A few puzzles:

>

>1) Are the pin numbers for P204 reversed on the schematic (or on the board)?

My notes show the "square" pad as pin 6 -- so I guess you might say they  
are reversed.

>2) When I turn on the power LED 2 comes on and stays lit. TESTLEDS and  
>TESTPORT blink the other Led's correctly, but L212 stays on. I've made  
>the following voltage measurements (alas, no scope):

|   |      |        |      |
|---|------|--------|------|
| > | U215 | pin 7  | 2.8v |
| > |      | pin 10 | 1.1v |
| > |      | pin 6  | 1.5v |
| > |      | pin 12 | 3.8v |
| > |      |        |      |

>Close examination with a magnifying glass shows no solder problems.

>

>Any clues?

>

>73, Bruce W3GDZ

The above is a little confusing. Did you mean pin 11 rather than pin 12?

What I would do is measure (your voltage readings are fine - a scope should  
not be required) the following:

After RESET. (LED1 s/b on, LED2 s/b off)  
U215, pins 6, 11, 7, 10  
6 s/b hi, 11 s/b low, 7 s/b low, 10 s/b hi

After pressing 'G' in the Monitor. (LED1 s/b off, LED2 s/b on)  
U215, pins 6, 11, 7, 10  
6 s/b low, 11 s/b hi, 7 s/b hi, 10 s/b low

Report back or inspect the traces when you find what's wrong.



Ron W5RKN

also:  
rparsons@bga.com

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## 5. Final Yaesu PSK beta test report #14

From: w6shp@amsat.org (Howard Sodja)  
Date: Tue, 01 Aug 1995 13:55:13 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508012054.NAA03954@hopf.dnai.com>  
Rendered body type: text/plain

Hello Frank,

I had a hard time testing the Yaesu PSK (+5 volts mic click) weak signal versions (psk93x1b and x2b) because the heat wave we had here caused an exceptionally high noise level. Previously my high noise level periods were on the average lower but with some noise spikes that triggered the mic clicks. This time the noise envelope was consistently high (4 v p-p) so that the mic click just ran away and the program was unusable with my omni Lindenblads. But under these bad noise conditions, the "strong signal, high noise level" versions (psk93x1a and x2a) worked great with my beams. Not one false click, and copy was good..

Today is cooler so the noise level is down, so I finally got to test the "weak signal" versions on my Lindenblads. They both worked fine. I guess it must be all those air conditioners on line when the temperature breaks 100!

Thanks for all your work tweaking these programs for us Yaesu owners.

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

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## 6. Re: [DSP-93:1230] Final Yaesu PSK beta test report #14

From: fperkins@onramp.net  
Date: Tue, 1 Aug 1995 20:34:25 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508020134.UAA17020@mailhost.onramp.net>  
Rendered body type: text/plain

CQ Howard,

Thanks for the test report on the YAESU radio port 2 versions. It hit 106 F here last week. We has a storm come in on the Texas coast Sunday and its been much cooler and rainy the last couple of days. Great break from the heat.

I'm in the Bay area 3-4 times each year on business. Maybe we can get together for a cup of coffee next time I'm out your way.

73 Frank WB5IPM

---

## 7. progguid.word

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Tue, 1 Aug 95 20:17:44 MDT  
To: dsp-93@tapr.org  
Message-ID: <9508020217.AA13637@rgfn.epcc.Edu>  
Rendered body type: text/plain

I have now just been able to view and print the programming guide that's in the dsp93 area on TAPR (progguid.wor). Microsoft has released a file called "wordvu.exe". It's Microsoft Word Viewer and allows one to view and print any Word 4.0 and above document. You should find it under "What's New" on the home page of Microsoft WWW. I got it real fast by going to:  
<http://www.civl.port.ac.uk/wv/wordvu.html>  
Hope this helps someone out there (like me) who does not have access to Word 6.0.  
Note:The only thing it did not do was show or print the block diagram of the dsp93. Something to do with it being a Mac graphic.

Now the hard part....to understand what I printed.

Charlie wa5kyv  
ab870@rgfn.epcc.edu

## 8. noise filters

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Wed, 2 Aug 95 05:21:28 MDT  
To: dsp-93@tapr.org  
Message-ID: <9508021121.AA21951@rgfn.epcc.Edu>  
Rendered body type: text/plain

Where can I get the w9gr\_93 noise filter that is listed  
on the current DSP93 software list?

charlie wa5kyv  
ab870@rgfn.epcc.ed###

## 9. Meteor Scatter Packet Activity

From: robertsm@jsc.mil  
Date: Wed, 2 Aug 1995 07:39:38 -0400  
To: dsp-93@tapr.org  
Message-ID: <95Aug2.074020edt.29444@annap2.jsc.mil>  
Rendered body type: text/plain

This isn't exactly DSP-93 activity, but should be of interest to the  
packet community.

73 Mel W3MR

```
begin 666 ms.up
M2&5R92!!I<R!W:&%T('=E(&%R92!D;VEN9R!F;W(@=&AE(%!E<G-E:61S('-H
M;W=E<BX@(%1H97)E)W,@;F]T(&5N;W5G:"!T:6UE=&\@9V5T(&ET(&EN=&\@
M45-4(&EN('1I;64L('!O('!L96%$92!S<')E860@=&AE('!O<F0N#0H-"C<S
M+`T*#0I3=&N+!"!703%,3U4-"@T*3D%424].5TE$12`R($U%5$52($U%5$5/
M4B!32$]715(@5$535"Q,2TQ-2!!54=54U0-"@T*5&AE($%U9W55="!14U0@
M4&8C:V5T(%!E<G-P96-T:79E(&-0;'5M;B!B>2!3=&8N($A0<GIE<&$@<&]N
M9&5R960@82!P;&%N('!O('!E<W0@,B!M971E;W(@<V-A='!E<BX@($Q%5%,@
M1$!\@250A("!!;6%T975R<R!.871I;VYW:61E87)E(&AE<F5B>2!E;F-O=7)A
M9V5D('!O('!A<G1I8VEP871E(&EN('!H92!097)S:65D<R!-971E;W(-"E-H
M;W=E<B!W:&EC:"!W:6QL('!E86L@;VX@,3,@075G+B`@06QT:&]U9V@-B!M
M971E<G,@:7,@9F%R(&)E='!E<B!T:&%N(#(@;65T97)S(&90<B!M971E;W(@
M<V-A='!E<B!W;W)K+"!E=F5R>6]N92!H87,@82`R(&UE=&5R(')A9&EO(&%N
M9"!W92!C86X@;6%K92!U<"!I;B!N=6UB97)S('!H870@:7,@;&%C:VEN9R!I
M;B!P97)F;W)M86YC92X@($%L;"!Y;W4@;F5E9"!I<R!A(%1.0RP@86YD('!R
M969E<F%B;'D@:&EG:"!P;W=E<B!A;F0@82!B96M+B`@5&AE(&]B:F5C=&EV
M92!I<W10('!E92!H;W<@;6%N>2!G<FED('!Q=6%R92`H1%@I('!A8VME='@
M>6]U(')E8V5I=F4@;W9E<B!T:&4@-"!D87D@979E;G0N#0H-"DAE<F4@:7,@
M=&AE('!L86XZ!"!3=&%T:6]N<R!I;B!T:&4@9F]U<B!Q=6%D<F%N=",@;V8@
M=&AE(&-O=6YT<GD@=VEL;"!A;'!E<FYA=&5L>2!T<F%N<VUI="!F;W(@,34@
M<V5C;VYD<RX@(%-T871I;VYS('!I;&P@=')A;G-M:70@=&AE('!H;W)T97-T
M('!O<W-I8FQE(&UE86YI;F=F=6P@<&%C:V5T(&90<FUE9"!B>2!P;&%C:6YG
M('!H96ER(#8@9&EG:70@9W)I9'-Q=6%R92!I;B!T:&4@54Y04D]43R!43R!C
M86QL<VEG;B!F:65L9"X@96<L("!7,T%$3SY&33$X4U@Z("!4:&4@<W5G9V55
M=&5D(&9R97%U96YC>2!I<R!T:&4@05)23"!E>"!E<FEM96YT86P@<&%C:V5T
M(&9R97%U96YC>2!O9B`Q-#4N-SDN#0I"12!355)%(%1(25,@1E)%455%3D-9
M($E3($Y/5"!/5$A%4E=)4T4@05-324=.140@24X@64]54B!4D5!+B`@159%
M3B!S;RQY;W40@8V%N('!T:6QL(&UO;FET;W(A#0H-"E-415`M0EDM4U1%4"!3
M150@55`@4%)/0T5$55)%4SH-"@T*,2D@4&]I;G0@>6]U<B!B96%M('!O=V%R
M9',@82!M86IO<B!P;W!U;&%T:6]N(&%R96$@86)O=70@-3`P('!O(#$P,#`@
M;6EL97,@#0H@("!A=V%Y(&EN(&]N92!O9B!T:&4@=&AR964@;W1H97(@55-!
M('!U861R86YT<RX@($EF('!H97)E(&ES(&%N;W1H97(@,FT-"B`@(&Q08V%L
M('!T871I;VXL(&-O;W)D:6YA=&4@>6]U<B!B96%M(&AE861I;F=S('!O('!H
M870@>6]U(&%R92!N;W0@8F]T:`T*("`@:&ET=&EN9R!T:&4@<V%M92!A>FEM
M=71H(&%N9"!R96-E:79E<B!T87)G970@87)E82X-"C(I($5N=&5R('!EO=7(@
M9W)I9"!S<75A<F4@<6YT;R!Y;W5R(%1.0R!U<VEN9R!T:&4@9F]L;&]W:6VG
M(&-O;6UA;F0Z#0H@("!C;60Z(%5.4%)/5$\@1DTQ.-%-8#0H@("H268@>6]U
M(&-A;FYO="!E<W1I;6%T92!T:&4@;&%S="`R(&I19VET<RP@=7-E($%)*0T*
M("`@3F]T:6-E('!H870@=&AE<F4@:7,@3D\@5DE!($1)1TE014%415(@=7-E
M9"$-`C,I($%45$5.1$5$($J015)!5$E/3CH@("!%;G1E<B!T:&4@8V]N=F5R
M<V4@>6]D92`H8VUD.B!#3TY6*2!A;F0@#0H@("!T:&5N(&5A8V@=&EM92!Y
M;W4@>ET('!EO=7(@8V%R<FEA9V4@<F5T=7)N(&ME>2P@>6]U('!I;&P@<V5N
M9"!A('!A8VME="X@('T*("`@2&ET(#P($-2)W,@86YD('!EO=2!W:6QL('!E
M;F0@82!B=6YD;&4@;V8@,C`@9W)I9"!S<75A<F4@<8%C:V5T<RX-"B`@(%-Y
M;F-H<F]N:7IE('!EO=7(@8VQ08VL@=VET;"!75U8@86YD('!R86Y5;6ET(&%S
M(&UA;GD@0U(G<R!Y;W4@8V%N(&EN#0H@("!T:&4@9F]L;&]W:6YG('!C:&5D
M=6QE.@T*("`@3F]R=&@@16%$S="!S=&%T:6]N<R!T<F%N<VUI="!B971W965N
M(#`P('!O($T('!E8V]N9',-"B`@(%-O=71H($5A<W0@+BXN("`@("`@("`@
M("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@
M("XN+B`@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@
M("`@3F]R=&@@5V55="N+BX@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@
M("`@3F]R=&@@5V55="N+BX@("`@("`@("`@("`@("`@("`@("`@("`@("`@("`@
```

M(#4Y(' -E8V]N9' , -"@T\* -"D@54Y!5%1%3D1%1"!/4\$52051)3TXZ(%1H:7. @M=VEL; " !P<F]B86)L>2!B92!T:&4@;6]S="!S=6-C97-S9G5L.@T\*(" `@82D>M4V5T(' 'EO=7(@@D5!0T] . (%1%6%0@=&\@7DA0('=H97)E(\$@@86YD(% @87)E M(' -I;F=L92!C:&%R86-T97)S.@T\*(" `@(" `@2"!I<R!B96%M(&AE86I;F<@M9&EV:61E9"!B>2`Q, " !A;F0@97AP<F5S<V5D(&)Y(' 1H92!D:6=I=" ,@, " !T M;R`Y#0H)86YD(' 1H96X@02!T:' )O=6=H(%HN(" `Y/3DP+" !/3\$P, "P@0CTQ M,3`L(\$ ,J,3(P+BXN(%H],54P#0H@(" `@(" !0(&ES(' 1H92!S<75A<F4@<F]O M=" !O9B!Y;W5R(' !O=V5R("4Q,"X@(#\$],3`L(#(]-#`L(#,J,3`N+BX@.3TX M,3`- "B`@(&(I(%-E="!Y;W5R(\$)%04-/3B!T;R!%5D5262`Q+B`@5&AI<R!I M<R!N;W0@:6X@86-C;W)D86YC92!W:71H(' 1H90T\*(" `@<V-H961U;&5D(#\$U M(' -E8V]N9"!C>6-L92P@8G5T(&ET(&ES(&)E=' 1E<B!T:&%N(&YO=&AI;F<@M:68@>6]U(&%R90T\*(" `@;W!E<F%T:6YG(' 5N+6%T=&5N9&5D+@T\*#0HU\*2!! M;' 1E<FYA=&EV96QY+" !R=6X@=&AE(\$%04E,@<' )O9W)A;2!V97)S:6]N(#<Q M8B!O<B!L871E<BP@=VAI8V@@:&%S(&%N(&%U=&]M871E9"!M;V1E(&90<B!-M971E;W(@4V-A=' 1E<B!A;F0@=VEL;" !P;&]T(&%L;" !R96-E:79E9"!P86-K M971S(&]N=&AE(&UA<"X@(" !!" ;'-O+" !I;B!M86YY(&%R96%S+" `Q-#4N-SD@M:7,@86QR96%QD>2!B96EN9R!U<V5D(&90<B!4%)3+B`@4F5A9"!T:&4@05!2 M4R!-151%3U(N='AT(&9I;&4N#0H-"D584\$5\$5\$424].4SH@(\$UE=&50<B!S M8V%T=&5R(' !A=&AS(&%R92!615)9(' -P96-I9FEC(&)E='=E96X@=&AE(' 1R M86YS;6ET=&5R(&%N9"!T:&4@<F5C96EV97(L(' 1Y<&EC86QL>2!A;GD@<VEN M9VQE(&5V96YT(' !I;&P@;VYL>2!B92!H96%R9"!B>2!R96-E:79E<G,@=VET M:&EN(&%B;W5T(&\$@,C`@;6EL92!F;V]T<' )I;G0N(" !4:&ES(&ES('=H>65V M97)Y;VYE(&-A;B!T<F%N<VUI=" !A=" !T:&4@<V%M92!T:6UE(&EN(' 1H92!S M86UE(&%R96\$L(' !R969E<F%B;'D@<@]I;G1I;F<@=&AE:7(@8F5A;7,@:6X@M<VQI9VAT;'D@9&EF9F5R96YT(&1I<F5C=&EO;G,N(" !!" !R!L;VYG(&%S(' 1H M97)E(&ES(&%B;W5T(#4P(&UI;&5S(&)E='=E96X@:61E;G1I8V%L(%1204Y3 M34E45\$E.1R!S=&%T:6]N<RP@=&AE:7(@<VEG;F%L<R!W:6QL(\$Y/5"!P<F]B M86)L>2!H:70@=&AE(' -A;64@<F5C96EV97)S(&%T(' 1H92!S86UE(' 1I;65S M+@T\*#0I7;% )02R!A;F0@25% (5%8@9&ED(&UA:V4@82!S=6-C97-S9G5L(#(@M:65T97(@<%C:V5T(&-O;G1A8W0@:6X@,3DX-" !O=F5R(&%B;W5T(&\$@,3`P M," !M:6QE<' !A=&@L(&)U=" !I=" !T;V]K(#(N-2!H;W5R<R!O9B!C;VYS=&%N M=" !P86-K971S+@T\*2&]P969U;&QY(&)Y(&AA=FEN9R!H=6YD<F5D<R!O9B!T M<F%N<VUI=' 1E<G,L(&%N9"!H=6YD<F5D<R!O9B!R96-E:79E<G,L('=E(&-A M;B!I;7!R;W9E(' 1H92!S=&%T:7-T:6-S+B`@5&AE(&)E<W0@=&EM92!F;W(@M:65T96]R<R!I<R!I;B!T:&4@96%R;'D@;6]R;FEN9W,@9G)O;2`P-#`P(' 10 M(#`X,#`@3\$]#04P@=&EM92X@(\$ )U=" !I=" !I<R!N;W0@;75C:" !W;W)S92!T M:&4@<F5S=" !O9B!T:&4@9&%Y+BXN#0H-"E)%4\$]25%,Z(" !3:6YC92!Y;W4@M=VEL;" !P;W-S:6)L>2!S964@<%C:V5T<R!T:&%T(&YO(&]N92!E;' -E('=I M;&P@<V5E+" !S96YD(&%L;" !G<FED<W%U87)E(' )E<@]R=' ,@\*\$]N;'D@=&AO M<V4@:VYO-VX@=&\@8F4@9W)E871E<B!T:&%N(#(U," !M:6QE<R!D:7-T86YT M\*2!T;R!M92!A;F0@22!W:6QL(&-O;7!I;&4@=&AE(&1A=&\$N(" !"92!355)% M(' 10(&EN8VQU9&4@>6]U<F=R:61S<75A<F4A#0H-"D)O8B!"<G5N:6YG82P@M5T(T05!2(\$ @2T\$54D9%+DU\$(&]R8G)U;FEN9V%`9W)E871L86ME<RYN861N M+FYA=GDN;6EL(" `H<' )E9F5R<F5D\*0T\*#0I0+E,N(" !4:&4@3F%V86P@06-A M9&5M>2`T," !F;V]T(&1I<V@@\*\$%N;F%P;VQI<R!-1"D@=VEL;" !B96%M(' 10 M=V%R9' ,@1FQO<FED82!O;B!T:&4@,3%T:"P@071L86YT82!O;B!T:&4@,3)T M:"P@=&AE(&UI9'=E<W0@;VX@=&AE(#\$S=&@N#0I\$;VYN;R!A8F]U=" !T:&4@M9FEN86P@;B!D87ES(' EE="X@(\$5X<&5C=&5D(' )A;F=E<R!A<F4@;VYL>2!A M8F]U=" `U-3`@;6EL97,L(' 1H;W5G:"P@8F5C875S92!T:&4@96QE=F%T:6]N M(&-A;FYO=" !G970@9&]W;B!B96Q0=R`Q," !D96=R965S+@T\*5&AE(' )A;F=E M(' 10(\$%T:&%N=&\$@86YD(\$EN9&EA;F%P;VQI<R!A<F4@86)O=70@<&5R9F5C 8=" !F;W(@=&AA="XN+@T\*#0H-"M"\$T\*T\*`  
`  
end

## 10. Re: [DSP-93:1233] noise filters

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 2 Aug 1995 07:25:43 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac451ed6d740@[204.181.160.71]>  
Rendered body type: text/plain  
  
>Where can I get the w9gr\_93 noise filter that is listed  
>on the current DSP93 software list?  
>  
>charlie wa5kyv  
>ab870@rgfn.epcc.ed###

It was never released by its author and e-mail to him goes unanswered. Sorry.

Ron W5RKN

also:  
rp Parsons@bga.com

## 11. Re: [DSP-93:1216] D93WE on an Intel 286 processor?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 2 Aug 1995 09:37:01 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d03ac453cbfde61@[204.251.33.79]>  
Rendered body type: text/plain

>I received my DSP-93 kit on Saturday and am busy building. However my question  
>concerns the D93WE (Version 1.1) program. The PC in the shack is an old 20 MHz  
>286 system running Windows 3.1 and gives an application error message when  
>loading D93WE. The message is 'D93WE caused an illegal instruction in module  
>D93WE.EXE at 0002:1241'. My first guess is that D93WE was compiled only  
>for 386  
>and newer processors using instructions not available on the 286, but that is  
>just a guess. The program loads fine on the 486 in the home office - but I'd  
>never get the go-ahead to move that to the shack!  
>  
>Is this a known problem? Whilst a 286/20 running Windows is not the 'hottest'  
>of environments, it provides fine support for the rest of my 'radio software'  
>  
>Thanks for your help.  
>  
>Mike Chamberlain - G3WPH

Sorry for the delay in responding to this. I forwarded this to the author  
of D93WE but he has not responded. I tried to boot my "286" Windows system  
but had problems booting. So ... I'd guess you are right, but we'll have to  
wait for confirmation.

Ron W5RKN

also:  
rparsons@bga.com

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## 12. Flux Removal, etc.

From: bobsmith@mail.i2020.net (Robert L. Smith)  
Date: Wed, 2 Aug 95 10:41:05 EDT  
To: dsp-93@tapr.org  
Message-ID: <Chameleon.950802114115.bobsmith@>  
Rendered body type: text/plain

To all --

Based on 30+ years of building space/mil qualified and presentation quality  
PCB's I offer the follow recommendations for flux removal --

1. If you have used a high quality, passivated flux solder, don't remove it.  
Kester, for example, states that removal is optional for its RA solders.

I use Kester RA solder 3.3% Flux "44". There are equivalents from  
Alpha and others.

|                     |    |                     |       |            |       |            |
|---------------------|----|---------------------|-------|------------|-------|------------|
| Digikey part number | 1# | roll 21 gauge 63/37 | .031" | KE-1102-ND |       |            |
|                     |    |                     | 25    |            | .020" | KE-1103-ND |

.031" solder should be used for all standard 'thru hole' soldering (IC sockets,  
resistors, etc.) Use .020" for very fine work such as surface mount parts.

2. Build your boards with "No Clean" solder. It leaves a nearly invisible  
residue and Kester recommends no removal. This solder works quite  
well for hand soldering boards and components in good condition (i.e.,  
no heavy corrosion from old parts from your junk box, etc.)

Kester type "245"

|             |    |                      |       |            |       |            |
|-------------|----|----------------------|-------|------------|-------|------------|
| Digikey p/n | 1# | roll 21 gauge, 63/37 | .031" | KE-1400-ND |       |            |
|             |    |                      | 25    |            | .020" | KE-1401-ND |

The above solders are also listed in the Newark catalogue

3. If you feel you must clean I suggest --

Chemtronics brand E-Series Flux-Off NR2000 flux remover.  
The Chemtronics Type ES-1694T, trigger spray, 16oz bottle  
is very handy for spot work. It features a three-position  
off/stream/mist nozzle.

Stock number 00Z1197 in my Newark catalogue

(DigiKey doesn't handle chemicals)

These are CFC, NCFC free removers which properly interact with the flux producing a volatile mixture that then evaporates leaving very little residue.

NR2000 is for use with 'sensitive' components. I have yet to see it take markings off of components or mess up a silk screen on a quality PCB.

I have also seen a small aerosol can flux remover on Radio-Shack shelves that states that it is CFC/NCFC free but have never tried it.

4. DO NOT use alcohol. It merely dissolves the flux and spreads it around the PCB, usually, as one reader noted, into the fingers of your IC sockets and other undesirable places.
5. Use only temperature regulated soldering irons. You don't need to invest hundreds of dollars in a fully controllable soldering station but you will never regret it if you do.

The Weller WP-60 general purpose, pencil style iron is available for about \$80-90 and is nicely sized for normal PCB work. Buy a selection of 700 and 800 degree tips with it.

See the Newark catalog for examples.

6. One final tip --- NEVER, NEVER, NEVER clean board edge connectors (such as those found on PC expansion cards) with an eraser. The gold plating on the fingers is only a few millionths thick and the abrasive particles in the eraser will nick the plating. It will look bright and shiny when you put it back in but contaminants are then free to attack under the surface of gold and destroy the integrity of the plating.

Just wash the fingers with alcohol and polish (gently) with a clean tissue or chem-wipe. I carry a few alcohol swabs of the type diabetics use in my travel kit for this purpose. Good Vodka works in a pinch.

Happy kit-ing!!

-----  
Robert L. Smith                      804/745-1065                      bobsmith@i2020.net  
Smith Machine Works, Inc.                      wa4ypv@w4za.ampr.org

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### 13. Re: [DSP-93:1237] Flux Removal, etc.

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 2 Aug 1995 15:38:17 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac45927501e8@[204.251.33.78]>  
Rendered body type: text/plain

>Based on 30+ years of building space/mil qualified and presentation quality  
>PCB's I offer the following recommendations for flux removal --

...  
> -----  
> Robert L. Smith                      804/745-1065                      bobsmith@i2020.net  
> Smith Machine Works, Inc.                      wa4ypv@w4za.ampr.org

Great summary, Thanks. I'll archive this.

Ron W5RKN

also:  
rparsons@bga.com

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### 14. Re: [DSP-93:1189] Re: Heat

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 2 Aug 1995 17:30:30 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508022230.RAA00190@beall.tenet.edu>  
Rendered body type: text/plain

>  
> Being conversative, I added a second heat-sink to each regulator and used  
> heat-sink compound to help conduct the heat. But I never had the problem  
> before or after doing that.  
>

As a note - the new cases have three holes in the bottom. These could be used for a metal attachment to the case for attaching heatsinks to -- if you wanted to bend a peice of metal and attach it to the case and the regulators.

Cheers - Greg

>

---

## 15. Re: [DSP-93:1197] Additional Memory for dsp-93

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 2 Aug 1995 17:43:36 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508022243.RAA32019@beall.tenet.edu>  
Rendered body type: text/plain

According to Alan M. Friedman:

>  
> I wonder how I can get supplemental memory SIMMs for the dsp-93. Are  
> they available from TAPR or should they be ordered elsewhere?  
>

You best bet on SRAM is check your local supplier or digikey or mouser, etc. We don't have any extras in stock -- we ended up getting hosed on the price this time...so we ordered only what we neede (this made up for the GREAT price we got on the first batch).

I am sure others on thelist can suggest prices and locations to get them from. Sorry we can't offer them -- to do so would mean at a price probably double ot tripe what you can get locally (at least with this batch).

Cheers -- Greg

---

## 16. Re: [DSP-93:1236] Re: D93WE on an Intel 286 processor?

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 03 Aug 1995 01:38:07 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508030152.VAA17852@camel.campbell.edu>  
Rendered body type: text/plain

Guys,

I'm almost certain I recall something about "386 or better" for CPU requirement.

>>I received my DSP-93 kit on Saturday and am busy building. However my question  
>>concerns the D93WE (Version 1.1) program. The PC in the shack is an old 20 MHz  
>>286 system running Windows 3.1 and gives an application error message when  
>>loading D93WE. The message is 'D93WE caused an illegal instruction in module  
>>D93WE.EXE at 0002:1241'. My first guess is that D93WE was compiled only  
>>for 386  
>>and newer processors using instructions not available on the 286, but that is  
>>just a guess. The program loads fine on the 486 in the home office - but I'd  
>>never get the go-ahead to move that to the shack!  
>>  
>>Is this a known problem? Whilst a 286/20 running Windows is not the 'hottest'  
>>of environments, it provides fine support for the rest of my 'radio software'  
>>  
>>Thanks for your help.  
>>  
>>Mike Chamberlain - G3WPH  
>  
>Sorry for the delay in responding to this. I forwarded this to the author  
>of D93WE but he has not responded. I tried to boot my "286" Windows system  
>but had problems booting. So ... I'd guess you are right, but we'll have to  
>wait for confirmation.  
>  
>  
>Ron WSRKN  
>  
>also:  
>rparsons@bga.com  
>

>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 17. heat

From: WayneH8117@aol.com  
Date: Wed, 2 Aug 1995 23:23:07 -0400  
To: dsp-93@tapr.org  
Message-ID: <950802232254\_46758787@aol.com>  
Rendered body type: text/plain

Ron, w5rkn

I have worked with this unit for several days and found the following:

1. Everything works without the cover.
2. One hour after the cover is put on, any running programs, such as PKTP1, ALLMONL1, or HOT\_HF93 crash.
3. After the crash with the cover still in place the DSP-93 will reset showing the first led on, run the T memory test in both high & low speeds, run the P-8 memory test, load and run TESTLEDS, (rom) or the TESTLED program can be loaded from the computer & run. The TESTBUZZ program will load and start, running the led sequence and then hang up. No other programs will function, although they all seem to load.
4. Remove the cover & measure voltages like mad, NOTHING wrong or different. Shortly everything works fine again.
5. Help.

Wayne WA6YET  
WayneH8117@aol.com

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## 18. Re: [DSP-93:1242] heat

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 3 Aug 1995 06:34:37 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac46646e5629@[204.96.0.144]>  
Rendered body type: text/plain

>Ron, w5rkn

>

> I have worked with this unit for several days and found the following:

> 1. Everything works without the cover.

> 2. One hour after the cover is put on, any running programs, such as PKTP1, >ALLMONL1, or HOT\_HF93 crash.

> 3. After the crash with the cover still in place the DSP-93 will reset >showing the first led on, run the T memory test in both high & low speeds, >run the P-8 memory test, load and run TESTLEDS, (rom) or the TESTLED program >can be loaded from the computer & run. The TESTBUZZ program will load and >start, running the led sequence and then hang up. No other programs will >function, although they all seem to load.

> 4. Remove the cover & measure voltages like mad, NOTHING wrong or >different. Shortly everything works fine again.

> 5. Help.

>

>Wayne WA6YET  
>WayneH8117@aol.com

I am out of ideas. Anyone else have any?

Ron W5RKN

also:  
rparsons@bga.com

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## 19. Re: [DSP-93:1243] Re: heat

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 03 Aug 1995 13:17:59 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508031332.JAA23266@camel.campbell.edu>  
Rendered body type: text/plain

How long after cover removal do you see recovery of the unit? Is it long enough to try to physically find the problem area with a can of "component coolant" or whatever that stuff is called? Spray a shot on an area and see if things recover quickly?

Who knows...sorry for the lame idea...

```
>>Ron, w5rkn
>>
>> I have worked with this unit for several days and found the following:
>> 1. Everything works without the cover.
>> 2. One hour after the cover is put on, any running programs, such as PKTP1,
>>ALLMONL1, or HOT_HF93 crash.
>> 3. After the crash with the cover still in place the DSP-93 will reset
>>showing the first led on, run the T memory test in both high & low speeds,
>>run the P-8 memory test, load and run TESTLEDS, (rom) or the TESTLED program
>>can be loaded from the computer & run. The TESTBUZZ program will load and
>>start, running the led sequence and then hang up. No other programs will
>>function, although they all seem to load.
>> 4. Remove the cover & measure voltages like mad, NOTHING wrong or
>>different. Shortly everything works fine again.
>> 5. Help.
>>
>>Wayne WA6YET
>>WayneH8117@aol.com
>
>
>I am out of ideas. Anyone else have any?
>
>
>Ron W5RKN
>
>also:
>rparsons@bga.com
>
>
>
```

Mark L. Hammond [KC4EBR]

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## 20. RE: [DSP-93:1244] heat stop

From: CECIL.RFM@sbridge.rfm.com (Cecil, Lon; X605) (by way of w5rkn@amsat.org  
(Ronald G. Parsons))  
Date: Thu, 3 Aug 1995 10:32:02 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac469c34dc52@[204.251.33.65]>  
Rendered body type: text/plain

```
>> The TESTBUZZ program will load and
>>start, running the led sequence and then hang up. No other programs will
>>function, although they all seem to load.
```

```
>> Shortly everything works fine again.
```

```
>
>Ron W5RKN
>
>also:
>rparsons@bga.com
>
```

\*\*\*\*\* NOTES from Cecil, Lon; X605 (CECIL @ RFM) at 3/08/95 08:56  
TESTBUZZ tries to initialize the AIO chip immediately after the LED cycle.  
There is a code chunk to connect the serial lines between CPU and the TI  
AIO chip, then three quick "write/wait/write/wait for interrupt" code  
chunks that initialize the AIO.

If anything goes "wrong" in these cycles, the AIO quits talking to the CPU.  
The CPU does not have a watchdog running during interrupts, so Bob added a  
WDT chip for the entire DSP-93. Thus far, I don't think any of the  
routines have enabled the DSP-93 Watch Dog Timer.

Try to connect the scope to the AIO output line (DXR ??) and heat the unit.  
Lon Cecil  
WB5PKJ

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## 21. Re: [DSP-93:1243] Re: heat

From: Mills@huey.udel.edu  
Date: Thu, 3 Aug 95 15:39:11 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org



Message-ID: <9508031539.aa04246@huey.udel.edu>  
Rendered body type: text/plain

Ron,

Is this the third or fourth case of heatstroke in the two batches of kits so far? So far, the only cure known to me that worked was to swap ICs on the digital board with another board known to work, whereupon both boards worked. I have to conclude there is a marginal timing problem somewhere, or some rogue pulse creeps in from somewhere like the reset chip. It might be worth a try to yank that chip and jury-rig a reset line, then run it somewhere hot. Such places are not hard to find around here.

Dave, w3hcf

---

## 22. Re: [DSP-93:1244] Re: heat

From: Mills@huey.udel.edu  
Date: Thu, 3 Aug 95 15:49:38 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9508031549.aa04265@huey.udel.edu>  
Rendered body type: text/plain

Mark,

In my case, the heatstroke victim was the digital board, which is hardly suprising. Since the stroke is evident only when the stack is connected and running a program, it's hard to individually wiggle a component on the digital board, wither physically or thermally. I tried using a hunk of metal as heatpipe stoked by soldering iron, but that didn't work very well. When I "fixed" my unit after swapping chips, I didn't take the time to find what particular chip swap made it work, since I thought mine was an exceptional case and that the probable cause was really a board problem. Now, I think a strong case can be made that something is wrong either due to timing margins or component tolerance.

Dave

---

## 23. Re: 400 baud PSK modem

From: danie.brynard@pixie.co.za (Danie Brynard)  
Date: Thu, 3 Aug 1995 22:06:32 +0200  
To: dsp-93@tapr.org  
Message-ID: <199508032006.WAA29622@foxbat.pix.za>  
Rendered body type: text/plain

Is there a 400 baud PSK demodulator for the DSP-93 yet ? If so would somebody send me a flow or block diagram. I would like to implement it on a 56002. I belong to the EVM and CARD4 users groups.

Any pointers to web/ftp/bookarticle references would also of course be welcome.

Thanking You

Danie zs6awk

Email: zs6awk@pixie.co.za

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## 24. Re: [DSP-93:1247] Re: heat

From: dmedley@indirect.com (David Medley)  
Date: Thu, 3 Aug 1995 14:25:35 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508032125.OAA03990@bob.indirect.com>  
Rendered body type: text/plain

Mark, Dave et al,

I thought I would just comment re the heat stroke problem. Here in Tucson my shack lamentably is not air conditioned and the ambient temperatures during the day have ranged from 118F to 105F for the past several weeks. The DSP runs all the time and has not missed a beat so I would question the comments about marginal design or component tolerances. This particular DSP has also travelled to Australia and back in the baggage hold of various airplanes and suffered only a zapped EPROM from some X-Ray machine. Maybe I have just been lucky but I have been impressed with the general ruggedness of the unit. The weak point is the mounting of the VR chips which tend to break off with vibration. I had two such cases in the above mentioned trip to Australia. Perhaps this has been taken care of in the latest kits.  
73 de Dave KI6QE

## 25. New Yaesu Modems

From: dmedley@indirect.com (David Medley)  
Date: Thu, 3 Aug 1995 14:41:59 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508032141.0AA04398@bob.indirect.com>  
Rendered body type: text/plain

Frank I made up a new cable this morning and tried the new modems on LUSAT and PACSAT. From these observations both worked with my system but the data rates were down from my previous relay system. The reason for this, I believe, is that with the new modems I am using the data jack in the rear of the 736 as distinct from the mike/phone jack in the front. The disadvantage of the data jack approach is that you have no control of the rx or tx gain in the radio and have to depend either on tweaking the gains in the software (this is a pretty coarse adjustment) or adjusting the internal pots in the DSP93 which is inconvenient to say the least. From my experience these adjustments can be quite critical to achieve maximum data rates. So I am going to try going back to the mike/phone jack approach with the new modems and see if this helps.

If you want to use a lot of modems as I do then you have to arrive at some median setting of the internal pots in the DSP and make individual adjustments on the radio itself.

Will make more comments later when I have had more experience with them. My enthusiasm is inversely proportional to the ambient temperature in my shack which exceeded 120F a few days back (no air conditioning!!).

73 de Dave

---

## 26. Re: [DSP-93:1246] Re: heat

From: Roy Welch <rdw@crl.com>  
Date: Thu, 3 Aug 1995 15:09:03 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950803150732.8735B-100000@crl7.crl.com>  
Rendered body type: text/plain

Ron, have these cases made the measurement on the 0.22 resistor voltage drops to eliminate the possibility that just one power supply is working?  
73, Roy

On Thu, 3 Aug 1995 Mills@huey.udel.edu wrote:

> Ron,  
>  
> Is this the third or fourth case of heatstroke in the two batches of kits  
> so far? So far, the only cure known to me that worked was to swap ICs on  
> the digital board with another board known to work, whereupon both boards  
> worked. I have to conclude there is a marginal timing problem somewhere,  
> or some rogue pulse creeps in from somewhere like the reset chip. It  
> might be worth a try to yank that chip and jury-rig a reset line, then  
> run it somewhere hot. Such places are not hard to find around here.  
>  
> Dave, w3hcf  
>

---

## 27. HotHF RTTY program

From: ROBERTSM@jsc.mil  
Date: Thu, 3 Aug 1995 19:43:21 -0400  
To: dsp-93@tapr.org  
Message-ID: <95Aug3.195458edt.29447@annap2.jsc.mil>  
Rendered body type: text/plain

Hi all, Where is a copy of the "hot HF" program for the DSP-93 located? I assume it was not on the distribution disk with the new DSP-93 kits.

73 Mel W3MR robertsm@jsc.mil

---

## 28. Re: [DSP-93:1252] HotHF RTTY program

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 3 Aug 1995 19:15:44 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4716daacdd@[204.181.160.66]>  
Rendered body type: text/plain

>Hi all, Where is a copy of the "hot HF" program for the DSP-93  
>located? I assume it was not on the distribution disk with the new  
>DSP-93 kits.  
> 73 Mel W3MR robertsm@jsc.mil

Always check ftp://ftp.tapr.org/tapr/dsp93/software/ for new software.

I believe it's modem.zip.

Ron W5RKN

also:  
rparsons@bga.com

---

## 29. Re: [DSP-93:1250] New Yaesu Modems

From: fperkins@onramp.net  
Date: Thu, 3 Aug 1995 19:55:12 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508040055.TAA20503@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Dave,

Please e-mail me your phone #. I'll give you a call this weekend and tell you what I found out working with Howard, who is using the "data jack" on his 736. While I prefer tweaking a volume control, I'll at least fill you in on setting the pots/choosing the modem for various conditions.

I am quite interested to see if your 736 acts any differently than Howards.

73 Frank WB5IPM

---

## 30. New DSP-93, Trouble

From: EARLWC@aol.com  
Date: Thu, 3 Aug 1995 22:42:19 -0400  
To: dsp-93@tapr.org  
Message-ID: <950803224215\_130049346@aol.com>  
Rendered body type: text/plain

Built unit and all tests were going fine till No 6 Testbuzz. Decided to use scope to look at ter' 10 at JP203 but didn't check term' arrangement and really went to ter' 19. Took readings at term' pins (between boards). there is the possibility of connecting pins 19 and 20 together and or grounding (bad scope probe). LED 1 and 2 ceased to work. Traced problem to U204. Finally got a replacement, but now I have LED 1 and 2 both on. Running TESTLED, 1 and 2 always on, others ok. Switching between R and G and back , no change in 2 , some brightness change at 1. Could I have a problem at U210, U112, U113.

Worked to many hours and got to anxious.

Thanks for any help.

Earl, W9HAD

---

## 31. Re: [DSP-93:1245] RE: heat stop

From: WayneH8117@aol.com  
Date: Thu, 3 Aug 1995 23:17:46 -0400  
To: dsp-93@tapr.org  
Message-ID: <950803231744\_47553295@aol.com>  
Rendered body type: text/plain

Lon, WB5PKJ

Many thanks for the information. I'll proceed in this direction.

Wayne WA6YET  
73

---

## 32. Re: [DSP-93:1252] HotHF RTTY program

From: Mills@huey.udel.edu  
Date: Fri, 4 Aug 95 0:06:47 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9508040006.aa05573@huey.udel.edu>  
Rendered body type: text/plain

Mel,

I left a copy of the latest distribution of the HF FSK modem in the upload directory on the TAPR ftp server a few weeks ago. It is called modem.zip. A copy should also be in the pub/ntp/modem.zip file on host louie.udel.edu. This version updates the version previously distributed on the DSP-93 diskettes. If you don't have the latest

diskettes, snatch the distribution from either ftp site. Also, should the algorithms and programming model interest you, see the UDel EE Department report 95-8-1, which I am about to stash on the web [www.ee.udel.edu/~mills](http://www.ee.udel.edu/~mills). Gawd, I didn't realize the program listing bloats some 50 pages.

Dave, w3hcf

---

### 33. Re: [DSP-93:1250] New Yaesu Modems

From: w6shp@amsat.org (Howard Sodja)  
Date: Thu, 03 Aug 1995 23:03:32 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508040603.XAA09407@hopf.dnai.com>  
Rendered body type: text/plain

Hello Dave,

>Frank I made up a new cable this morning and tried the new modems on LUSAT  
>and PACSAT. From these observations both worked with my system but  
>the data rates were down from my previous relay system. The reason for this,  
>I believe, is that with the new modems I am using the data jack in the rear  
>of the 736 as distinct from the mike/phone jack in the front. The  
>disadvantage of the data jack approach is that you have no control of the rx  
>or tx gain in the radio and have to depend either on tweaking the gains in  
>the software (this is a pretty coarse adjustment) or adjusting the internal  
>pots in the DSP93 which is inconvenient to say the least. From my experience  
>these adjustments can be quite critical to achieve maximum data rates. So I  
>am going to try going back to the mike/phone jack approach with the new  
>modems and see if this helps.

Is your FSK input set to exactly 1 v p-p? If so the data jack should give you about 5 v p-p with slight clipping when the signal is strong. My guess is your FSK in is not set to exactly 1 v p-p. Frank set up the psk gain via software for the DSP being set for 1 v p-p FSK. Check TP1 to see what you have. If it is more, excessive clipping will lower your throughput. If it is less, you will not get good copy when the signal is down, at the start and finish of passes and during the normal qsb of a pass.

When I got my TAPR PSK hardware modem I experimented comparing my data jack with my mic input and speaker output and I found my throughput definitely better with the data jack. My TAPR modem's throughput figures (pb/pg.log) were compared with several other Microsat users a few years ago and my throughput was up with the best pb/pg logs I got. You were one of those who sent me your pb/pg.logs, and we were comparable. With Frank's modem, using the data jack, I get a bit better throughput than I did with my TAPR hardware modem.

Another possibility is that you had high noise when testing the new software. I kept a scope attached to TP1 and found my throughput varied directly with my noise level, and my noise level varied from 2 to 4 v p-p.

Don't give up on Frank's modem program yet! Check TP1 first. Solder a short bare wire to it so you can clip your scope probe to it and monitor it during psk and fsk passes.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

### 34. Re: [DSP-93:1247] Re: heat

From: torfinn@spacetec.no (Torfinn Holand)  
Date: Fri, 04 Aug 1995 09:34:50 +0200  
To: dsp-93@tapr.org  
Message-ID: <9508040832.AA14807@jupiter.spacetec.no>  
Rendered body type: text/plain

>Mark,  
>

>In my case, the heatstroke victim was the digital board, which is hardly  
>suprising. Since the stroke is evident only when the stack is connected  
>and running a program, it's hard to individually wiggle a component on  
>the digital board, wither physically or thermally. I tried using a hunk  
>of metal as heatpipe stoked by soldering iron, but that didn't work very  
>well. When I "fixed" my unit after swapping chips, I didn't take the  
>time to find what particular chip swap made it work, since I thought mine  
>was an exceptional case and that the probable cause was really a board  
>problem. Now, I think a strong case can be made that something is wrong

>either due to timing margins or component tolerance.  
>  
>Dave  
>  
>

Hi everybody,

I have followed the heatstroke discussion with great interest while waiting for my own kit to arrive. As expected the kit was waiting for me when I returned from the AMSAT-UK Colloquium a few days ago. Having studied the received components I would like to introduce a new theory: May the problem be caused by some defective IC sockets? In my kit I found two 24-pin slim sockets of the high quality round, four finger contact type ( In my Robinson Nugent catalogue they are named 'Screw Machine Sockets'). All the other were of the cheaper AMP dual wiping contact type.

Some years ago I experienced an equivalent problem in a number of keyboards of the Tandberg Data 22xx series of display terminals. The failing keyboards could be temporarily fixed by lifting the EPROMs from the sockets and putting them back again. However, the problem was likely to show up again within a few weeks. The only permanent cure was to replace the EPROM sockets. I always used high-quality sockets of the screw machine type for this repair, and the problem was gone forever.

I have not seen the dual wiping type of sockets used in professional equipment for years, only the screw machine types. I guess there is a reason for that.

Comments are welcome.

Regards

Torfinn, LA7SP  
E-mail: la7sp@amsat.org

---

### 35. Re: [DSP-93:1255] New DSP-93, Trouble

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 4 Aug 1995 07:19:25 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac47be7c0fa0@[204.181.160.66]>  
Rendered body type: text/plain

>Built unit and all tests were going fine till No 6 Testbuzz. Decided to use  
>scope to look at ter' 10 at JP203 but didn't check term' arrangement and  
>really went  
>to ter' 19. Took readings at term' pins (between boards). there is the  
>possibility of connecting pins 19 and 20 together and or grounding (bad scope  
>probe). LED 1 and 2 ceased to work. Traced problem to U204. Finally got a  
>replacement, but now I have LED 1 and 2 both on. Running TESTLED, 1 and 2  
>always on, others ok. Switching between R and G and back , no change in 2 ,  
>some brightness change at 1. Could I have a problem at U210, U112, U113.  
>  
>Worked to many hours and got to anxious.  
>  
>Thanks for any help.  
>  
>Earl, W9HAD

Have you followed the lines going to LEDs 1 & 2 back toward their source in U204?

The port that controls these two LEDs also control the gain and port assignments (see the Programming Manual). Have you run TESTGAIN and TESTPORT? Do they work correctly?

It's best not to attach a probe to the pins connecting the boards (as you found out). Use a wire placed into the socket part of JP203 and attach the probe to it.

Ron W5RKN

also:  
rparsons@bga.com

---

### 36. Re: [DSP-93:1253] Re: HotHF RTTY program

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 04 Aug 1995 12:34:34 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508041250.IAA01131@camel.campbell.edu>  
Rendered body type: text/plain

Yes, it was on the diskettes for the second build. But I think the most recent version is where Ron indicated below....

>>Hi all, Where is a copy of the "hot HF" program for the DSP-93  
>>located? I assume it was not on the distribution disk with the new  
>>DSP-93 kits.  
>> 73 Mel W3MR robertsm@jsc.mil  
>  
>  
>Always check ftp://ftp.tapr.org/tapr/dsp93/software/ for new software.  
>  
>I believe it's modem.zip.  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 37. Sockets

From: Bob Smith <rsmith@internetmci.com>  
Date: Fri, 04 Aug 1995 09:02:19 -0400  
To: "'List DSP-93'" <dsp-93@tapr.org>  
Message-ID: <01BA624E.631C9A60@dialup785.Bloomington.mci.net>  
Rendered body type: text/plain

I got my kit the day before I had to go on a trip! Anyways I'm out here in Santa Clara and inclined to replace at least the 18,16,and 8 pin sockets that came with my kit prior to soldering. The other sockets that say 'AMP' on them seem like pretty good quality. Any suggestions on where to go in the valley to get better sockets? Thanks.

---

## 38. Re: [DSP-93:1237] Flux Removal, etc.

From: ah231@detroit.freenet.org (Bernard F. Gaffney Jr.)  
Date: Fri, 4 Aug 1995 10:18:24 -0400  
To: dsp-93@tapr.org  
Message-ID: <199508041418.KAA20530@detroit.freenet.org>  
Rendered body type: text/plain

>  
>Good Vodka works in a pinch.

Use enough - you don't care WHAT your kit looks like. <\*>

--

Bernard F. Gaffney, Jr.  
n8pvz@amsat.org  
Old Hams never die -- their Yagis just go limp

---

## 39. Re: [DSP-93:1258] Re: New Yaesu Modems

From: fperkins@onramp.net  
Date: Fri, 4 Aug 1995 22:09:48 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508050309.WAA21482@mailhost.onramp.net>  
Rendered body type: text/plain

CQ Howard,

Thanks for your comments to Dave re 736 operation via the data output.  
You reminded me of a point or two also.

73 Frank WB5IPM

---

## 40. Two more successful kit builds

From: Bob Morgan <morganb@tenet.edu>  
Date: Sat, 5 Aug 1995 20:00:13 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508060100.UAA02479@beall.tenet.edu>  
Rendered body type: text/plain

I put my dsp-93 modem together a few weeks ago, and it came up and ran all the eeprom self tests satisfactorily. Waveforms looked good on the 'scope. The only kit problem was the missing nut and washer on the volume control. Contrary to a recent report here, the pushbutton hardware did not interchange, so I gather that multiple variations of either or both are being shipped. For the time being, I am using a tiwrap for a nut. No standard hardware from other pots come close to a fit, at least as far as my junkbox stock is concerned.

I started modifying the FT-726 for FSK and AFSK connections. This job is more time consuming than building the kit, and it is not yet done.

Joe WA5VMS received his kit the other day, and reports his kit is now complete and tested in some fashion. He also has an FT-726 for a VHF/UHF/Satellite station. Both of us are heavily involved in terrestrial higher speed packet (TexNet), and I am sure that between us we will be testing various other radios to interface, which will include those we have been using on that facet of networking. We presently have familiarity with surplus commercial UHF equipment which includes the RCA-700, Motorola Micor, Maxar, Mocom-70, and Mitrek, and maybe a GE model whose designation I forgot now (it didn't prove too successful). Most of that experience is TexNet dc coupled NRZ, but lately Joe has been checking out some of the ac coupled NRZI stuff, which includes some of the tapr and G3RUH designs, and I suspect we will eventually look at and compare both. (Both of us are very partial to the dc coupled NRZ format).

I finished the kit in less than the 10 hour estimate, and I think that Joe did too.

Joe does not have access to internet. Probably best way is to send some comments my way and I will try to bundle them up and send them his way from time to time, probably over TexNet or maybe phone comments.

73 de Bob  
Robert B. Morgan  
WB5A0H  
Austin, Texas  
morganb@tenet.edu

---

## 41. Useful DSP Web Sites

From: Greg Jones <gjones@tenet.edu>  
Date: Sat, 5 Aug 1995 20:04:24 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199508060104.UAA04297@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Thanks to Tom McDermott for a list of useful Web sites now included on the TAPR/AMSAT DSP-93 web page. <http://www.tapr.org/tapr/html/dsp93.html>

We would like to expand this list as good DSP sites are found -- please let me know if you have a site suggestion.

Cheers - Greg, WD5IVD

---

## 42. Nut for Vol Control

From: Greg Jones <gjones@tenet.edu>  
Date: Sat, 5 Aug 1995 20:13:57 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199508060113.UAA18344@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

We are checking on the volume pot nut to see what happened in Tucson when the kit was put together. Sorry for any inconvenience. As soon as we know if we have them in Tucson and they just didn't make it into the kit or if we have to purchase new ones -- we will let you know. The plan right now is to ship everyone a nut as soon as we have them in Denton.

Cheers - Greg

---

## 43. RE: [DSP-93:1267] Nut for Vol Control

From: Charles Stampf <cstampf@mhv.net>  
Date: Sat, 5 Aug 95 20:43:21 PDT

To: dsp-93@tapr.org  
Message-ID: <Chameleon.4.01.2.950805204509.cstampf@cstampf.mhv.net>  
Rendered body type: text/plain

Greg,  
For what it's worth, dont bother sending a volume control nut to me. I've found one that will do. Not much sense wasting that shipping money. But thanks anyway....

Charlie, N2CJ

---

#### 44. Re: [DSP-93:1265] Two more successful kit builds

From: fperkins@onramp.net  
Date: Sat, 5 Aug 1995 22:30:52 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508060330.WAA29034@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Bob,

Just a quick comment. The TPRS\*. \* are the 9600 bps Texnet modems. Since they are not NRZI they are polarity sensitive. The ones published are +/- (1 shifts frequency up). Let me know what polarity you need for the 726's and I'll set you up.

Are you coming to the DCC meeting in Arlington?

73 Frank WB5IPM

---

#### 45. RE: [DSP-93:1262] Sockets

From: bobsmith@mail.i2020.net (Robert L. Smith)  
Date: Sat, 5 Aug 95 23:21:51 EDT  
To: dsp-93@tapr.org  
Message-ID: <Chameleon.950805233950.bobsmith@>  
Rendered body type: text/plain

>I got my kit the day before I had to go on a trip! Anyways I'm out here =  
>in Santa Clara and and inclined to replace at least the 18,16,and 8 pin =  
>sockets that came with my kit prior to soldering. The other sockets =  
>that say 'AMP' on them seem like pretty good quality. Any suggestions =  
>on where to go in the valley to get better sockets? Thanks.  
>  
>

Both AMP and Mill-Max machine screw style sockets are available from Digi-Key.

I have used AMP sockets for years and have had excellent luck with them.

There has been an on-going argument in my head regarding gold plate vs. tin plate. Being from a high-rel background I tend towards gold but the worst problems I have ever had was a bunch of gold sockets with incomplete plating. The exposed copper had began to oxidize (invisible of course) and soldering was absolute H\_\_\_. On the other hand, availability problems have forced me to use tin plate from time to time and I have never had problems with them.

Perhaps someone else can provide some authoritative references in this area?

The one thing to absolutely avoid is sockets which are not sealed around the bottom of the legs. If excess solder is used whilst soldering into the PCB, it can wick up the leg and into the contact fingers. Needless to say, insertion of the IC then becomes somewhat difficult.

Which brings up a soldering tip. Use only the minimum amount of solder required to flow through the plated thru holes and no more. A properly soldered joint will have a concave fillet between the PCB pad and the component lead. If the solder builds up to convex (or forms a ball around the lead) you have used too much.

According to NASA training of years back maximum joint strength results when the minimum amount of solder required to thoroughly wet all component leads and form concave fillets is used.

-----  
Robert L. Smith                      804/745-1065                      bobsmith@i2020.net  
Smith Machine Works, Inc.                                      wa4ypv@w4za.ampr.org



## 46. [HFSIG:527] FEC packages updated (fwd)

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 6 Aug 1995 10:05:57 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199508061505.KAA29204@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

Thought I might forward this message from the HF SIG here.

Greg

According to Phil Karn:  
>From daemon Sun Aug 6 01:28:20 1995  
Date: Sun, 6 Aug 1995 01:14:47 -0500  
Message-Id: <199508060606.XAA10906@unix.ka9q.ampr.org>  
Reply-To: hfsig@tapr.org  
Originator: hfsig@tapr.org  
Sender: hfsig@tapr.org  
Precedence: bulk  
From: Phil Karn <karn@unix.ka9q.ampr.org>  
To: hfsig@tapr.org  
Subject: [HFSIG:527] FEC packages updated  
X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas  
X-Comment: Tucson Amateur Packet Radio HF Special Interest Group

I've put out updated versions of the Fano and Viterbi decoder packages I originally released in March.

The changes aren't extensive; mostly minor bug fixes and some cosmetic reworking. They're described in the new readme files. My web page

<http://www.qualcomm.com/people/pkarn/ham.html>

has been updated to point to the updated files.

Note: since the files themselves reside in ftp.ucsd.edu's anonymous upload directory, I was unable to overwrite or delete the old versions. So I had to create new file names. Flush any old copies you may have of the web page mentioned above.

Phil

---

## 47. Re: [DSP-93:1265] Two more successful kit builds

From: k0vm@k0vm.ampr.org (Al Groff - K0VM)  
Date: Sun, 06 Aug 95 11:48:21 CST  
To: dsp-93@tapr.org  
Message-ID: <21293@k0vm.ampr.org>  
Rendered body type: text/plain

In message <199508060100.UAA02479@beall.tenet.edu> dsp-93@tapr.org writes:  
> on the 'scope. The only kit problem was the missing nut and washer  
> on the volume control. Contrary to a recent report here, the pushbutton  
> hardware did not interchange, so I gather that multiple variations  
> of either or both are being shipped. For the time being, I am using a  
> tiwrap for a nut. No standard hardware from other pots come close  
> to a fit, at least as far as my junkbox stock is concerned.

Well mine is complete too now and was missing the same hardware....

Solved it with a trip to rad shack and for \$1 + I purchased suitable hardware and got a pot for the junk box thtorwn in for free

-73- AL -----+-----  
Al Groff, K0VM | bbs : k0vm@wa0rjt.ia.usa.noam |  
Cedar Rapids, Ia | packet : k0vm@k0vm.ampr.org |  
-----+ internet : al@ia.net -----+

---

## 48. Another kit together and some ?'s

From: Bob Smith <rsmith@internetmci.com>  
Date: Sun, 06 Aug 1995 15:13:57 -0400  
To: "'List DSP-93'" <dsp-93@tapr.org>  
Message-ID: <01BA640F.47F78200@usr8-dialup20.Atlanta.mci.net>  
Rendered body type: text/plain

Well, my story is (everyone has one right!) I started the kit sat morn after a red eye from San Jose (to Atlanta). I picked up replacement sockets for all IC's as suggested (from Fry's - thanks to all who suggested them!). Box came up as advertised on the first go.

I did make one corrected mistake: installed the DSP chip socket 90 degrees to port. What a nightmare -

well I just altered it with my trusty exacto knife so I could get the chip in the right way and all is fine.

Not used to such small solder pads so it took some getting used to in soldering - by the second board I was doing great - LESS is MORE is the lesson. The blobbed joints cleaned up great with solder wick.

Cleaned the boards w/ denatured alchohol as I recommended (takes at least 3 times) and they look great.

The regulators do get really hot - I will be adding additional heat sinking and grease to help get that down - can't be good for the unit's componants in the long run whether it affects it in the short term or not.

Have tested the audio functions and all are fine.

A couple of questions:

- 1) Is there a recommended speaker - there probably is a balance between quality and the LM384 characteristics I suppose.
- 2) Are the extra filter caps worth it?
- 3) Do I need a well shielded cable between my PK900 and the DSP-93? Wanted to use ribbon so I wouldn't have to cut or drill anything.

That's it for now. Thanks TAPR for all of the fun. Thanks list members for the support.

Bob Smith  
N3FTU  
N3FTU@amsat.com

---

## 49. Hypothesis on heatstroke

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 6 Aug 1995 15:07:24 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4acdd31990@[204.96.0.76]>  
Rendered body type: text/plain

WARNING! The following is speculation.

We have had reported several cases of so called heatstroke with the DSP-93. The symptom seem to be that with the case on, after some period of time, the DSP-93 ceases to function.

The one reported "cure" was to exchange all ICs from a "sick" unit with a "well" unit, after which both units worked.

My hypothesis is that as the unit warms up, some electrical connection becomes unstable. This might be a solder joint or a IC/socket connection.

Following this hypothesis, my suggestion the the heatstroke victims would be to do the folowing:

1. Reseat all socketed components (you might want to skip the DSP chip except as a last resort). It would not be necessary to actually remove the ICs from the socket, just lift them up slightly and firmly reseat them.
2. After the unit is warm but still working, gently depress various sections of each PCB with an insulated tool (dowel rod?). This gentle flexing of the PCB may cause the unstable connection to break. Do this when a program is running in the DSP-93 that produces constant output to the terminal, e.g., SPEEDTST or MEMTEST.

As I said, this is speculation. But doing something is better than doing nothing.

Ron W5RKN

also:  
rparsons@bga.com

---

## 50. Re: [DSP-93:1273] Another kit together and some ?'s

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 6 Aug 1995 15:16:30 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac4ad2462535@[204.181.160.86]>  
Rendered body type: text/plain

>Bob Smith

>A couple of questions:

>

>1) Is there a recommended speaker - there probably is a balance between =  
>quality and the LM384 characteristics I suppose.

No info.

>2) Are the extra filter caps worth it?

I'd say no UNLESS the output (+5V) has some dips in it. Mine did, about 50 mV at 60 Hz. A couple extra caps cured it.

>3) Do I need a well shielded cable between my PK900 and the DSP-93? =  
>Wanted to use ribbon so I wouldn't have to cut or drill anything.

My unit works without a shielded cable between my DSP-93 and my MFJ-1270B. Of course, the way MFJ paints all surfaces of their cases, the TNC really isn't shielded either. Since I play with my DSP-93 a lot, I also usually run with the case off. Only the most diligent search turns up ANY trace of radiation from the DSP-93 getting into my IC-970. I guess it's well shielded and the antennas are well away from the shack.

Ron W5RKN

also:  
rparsons@bga.com

---

## 51. Re: [DSP-93:1273] Another kit together and some ?'s

From: fperkins@onramp.net  
Date: Sun, 6 Aug 1995 15:28:43 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508062028.PAA05381@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Bob,

I recommend that you use shielded cable between the DSP-93 and your TNC. It will be worth the pain in reduced RFI.

73 Frank WB5IPM

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## 52. Heat Stroke Hypothesis

From: Dave Lamont <dlamont@central.co.nz>  
Date: Sun, 06 Aug 1995 22:23:44 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508062223.KAA22852@central.co.nz>  
Rendered body type: text/plain

Warning: As Ron put it. This is conjecture. But from what I have read in the "lists" recently the symptoms point in this direction.

Thermal shutdown of the regulators due to excessive differential voltage across the regulators.

As the fault appears to affect only a "few", the random causes of this could be?? !!!!!!!

1: higher than usual mains input to the wall mounted transformer in some locations

2: higher than normal 9v AC supply to the DSP-93

3: Regulator/s out of spec. (1.... but hardly both)

4: Excessive current drain from 1 regulator. (The .22 ohm voltage check will prove this)

Cure: Once the unit has been proven with the cover off. Unship the +5v regulators and mount them on the bottom of the aluminium case alongside their original position. I have done this as a matter of course as I did not want to chance the regulators breaking off with vibration.

I replaced the regulators on the PCB's with a three pin polarized pin and socket set up, but there is no reason why they cannot be hard wired.

or

reduce the differential voltage across the regulators with series resistance to the regulator's IN pin. The regulators require a minimum of 2v difference between In and Out pins to operate correctly. The greater the IN voltage is from the regulated OUT voltage, the greater the heat dissipation from the devices and the chance of thermal shutdown. The regulators recover from thermal shutdown quite rapidly.

Kind regards

Dave Lamont

Packet Radio: z12amd@z12amd.#40.nzl.oc  
Fax: 64-6-843-2953  
Phone: 64-6-844-9117  
Internet: dlamont@central.co.nz  
Amateur Satellites: uo-22 ko-23 ko-25 ao-16

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### 53. Re: [DSP-93:1274] Hypothesis on heatstroke

From: Mills@huey.udel.edu  
Date: Mon, 7 Aug 95 2:15:47 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9508070215.aa17178@huey.udel.edu>  
Rendered body type: text/plain

Ron,

To all the heatsroke victims, be advised I did in fact flex the boards rather severely and did in fact reset all ICs. I did in fact gently (roughly) wiggle each IC and in fact mangled the stack very rudely. I measured the supply current, measured the temperature abuse and scoped each and every bus signal. You need to look a lot deeper for the cause of the stroke.

Dave, w3hcf

---

### 54. Temperature sensitivity of DSP-93 analog section.

From: MIKE CHAMBERLAIN DTN 830-3476 <chamberlain@rdgeng.ENET.dec.com>  
Date: Mon, 7 Aug 95 04:06:00 PDT  
To: dsp-93@tapr.org  
Cc: chamberlain@rdgeng.ENET.dec.com  
Message-ID: <9508071104.AA00583@enet-gw.pa.dec.com>  
Rendered body type: text/plain

I've now finished building the DSP-93 kit and have discovered a temperature sensitivity problem. After approximately 3 minutes of operation at normal room temperature the analog section fails - the digital section continuing to function correctly. Example - if I'm running HOT\_HF93 modem the modem stops working, but MEMTEST, LEDTEST, MONITOR and communication through the serial channel continue to work.

A carefully placed heat sink (an ice cube in a very small zip-lock bag) placed on U208, the TLC32044 brings the unit back to life in approximately 20 seconds. The unit continues to operate as long as I'm prepared to add ice!

I've tried repeating the test but now cooling U210 - the PAL control for the TLC32044 - instead of U208, but the unit still fails. Unfortunately I don't have access to a scope at the moment, and don't have access to the design equations and timing for the PAL so my testing isn't conclusive, but it looks as if I've got a problem either in U208 or U210. Whilst the tests point to U208, I've seen too many PALs that have failed to meet timing specifications. By the way my TLC32044 is date coded 9341AN.

So two questions:

- Has anybody had similar problems?
- Who should I contact at TAPR to get some replacement chips?

Now some positive news - The HOT\_HF93 modem is amazing - it copies RTTY signal that my MFJ1278 thinks are noise, and I'm having great fun with the CW filter. Now on to the PSK modems.

Regards,

Mike - G3WPH

## 55. Re: [DSP-93:1216] D93WE on an Intel 286 processor?

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott) (by way of w5rkn@amsat.org (Ronald G. Parsons))  
Date: Mon, 7 Aug 1995 07:38:58 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac4bb9d78d39@[204.96.0.137]>  
Rendered body type: text/plain

D93WE WILL NOT run on a 80286. The libraries it is built with only work on an 80386 or higher processor.

- Tom, N5EG

|                                        |                            |
|----------------------------------------|----------------------------|
| -----+-----                            |                            |
| Tom McDermott                          | "All opinions expressed    |
| Alcatel Network Systems, Inc.          | are my own, and do not     |
| mcdermot@aud.alcatel.com               | represent those of Alcatel |
| [ ICC'96 Technical Program Secretary ] | Network Systems, Inc."     |
| [ June 23-27, 1996, Dallas, Tx. ]      |                            |
| -----+-----                            |                            |

## 56. RE: [DSP-93:1274] Hypothesis on heatstroke

From: Bob Smith <rsmith@internetmci.com>  
Date: Mon, 07 Aug 1995 09:15:46 -0400  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BA64A6.C4C05E00@usr8-dialup20.Atlanta.mci.net>  
Rendered body type: text/plain

My voltage reg IC's get awfully hot - could that cause other componants to get hotter then spec'd - especially with the cover on?

-----  
From: Ronald G. Parsons[SMTP:w5rkn@amsat.org]  
Sent: Sunday, August 06, 1995 4:23 PM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1274] Hypothesis on heatstroke

WARNING! The following is speculation.

We have had reported several cases of so called heatstroke with the DSP-93. The symptom seem to be that with the case on, after some period of time, the DSP-93 ceases to function.

The one reported "cure" was to exchange all ICs from a "sick" unit with a "well" unit, after which both units worked.

My hypothesis is that as the unit warms up, some electrical connection becomes unstable. This might be a solder joint or a IC/socket connection.

Following this hypothesis, my suggestion the the heatstroke victims would be to do the following:

1. Reseat all socketed components (you might want to skip the DSP chip except as a last resort). It would not be necessary to actually remove the ICs from the socket, just lift them up slightly and firmly reseat them.

2. After the unit is warm but still working, gently depress various sections of each PCB with an insulated tool (dowel rod?). This gentle flexing of the PCB may cause the unstable connection to break. Do this when a program is running in the DSP-93 that produces constant output to the terminal, e.g., SPEEDTST or MEMTEST.

As I said, this is speculation. But doing something is better than doing nothing.

Ron W5RKN

also:  
rparsons@bga.com

## 57. Re: [DSP-93:1281] RE: Hypothesis on heatstroke

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 7 Aug 1995 09:14:37 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4bcfcab53d@[204.96.0.137]>  
Rendered body type: text/plain

Bob Smith

```
>----- =_NextPart_000_01BA64A6.C4C985C0
>Content-Type: text/plain; charset="us-ascii"
>Content-Transfer-Encoding: 7bit
>
>My voltage reg IC's get awfully hot - could that cause other componants to
>get hotter then spec'd - especially with the cover on?
>
>-----
```

Have you done the tests outlined in the Build Updates regarding power supply balancing?

Also you had an attachment that wasn't decoded???????

```
>
>----- =_NextPart_000_01BA64A6.C4C985C0
>Content-Type: application/x-tnef
>Content-Transfer-Encoding: base64
>
>eJ8+IiENAQaQCAAEAAAAABAAEAAQeQBGAIAAAA5AQAAAAAADoAAENGAAQAAgAAAAIAAgABBJAG
>AAgBAAABAAAAADAAAAAADAADAAACwAPDgAAAAACAf8PAQAAAD0AAAAAAAAGSsfPL6jEBmdBgDd
...
>ZLoBHgA9AAEAAAAFAAAAUkU6IAAAAADBQg==
>
>----- =_NextPart_000_01BA64A6.C4C985C0--
```

Ron W5RKN

also:  
rparsons@bga.com

---

## 58. web page on digital voice (fwd)

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 7 Aug 1995 09:49:59 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199508071450.JAA21569@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to Phil Karn:  
>From daemon Sun Aug 6 21:56:50 1995  
Date: Sun, 6 Aug 1995 18:15:53 -0700  
From: Phil Karn <karn@unix.ka9q.ampr.org>  
Message-Id: <199508070115.SAA13733@unix.ka9q.ampr.org>  
To: amsat-bb@amsat.org, tcp-group@ucsd.edu  
Subject: web page on digital voice

I have created a web page that demonstrates the potential of digital speech encoding as compared with conventional SSB on power-limited satellite channels. Like my earlier demo page on forward error correction, it contains demo audio files in 8Khz mu-law ".au" format.

The URL is <http://www.qualcomm.com/people/pkarn/voicedemo>

--Phil

---

## 59. Re: [DSP-93:1279] Temperature sensitivity of DSP-93 analog section.

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 7 Aug 1995 10:00:15 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4bd8a8cab4@[204.251.33.27]>  
Rendered body type: text/plain

Mike - G3WPH

```
...
>
> A carefully placed heat sink (an ice cube in a very small zip-lock
> bag) placed on U208, the TLC32044 brings the unit back to life in
> approximately 20 seconds. The unit continues to operate as long as
> I'm prepared to add ice!
```

Interesting. The TLC32044C is speced for air temps from 0 to 70 C. I doubt you are getting that hot.

Does the chip feel hot to the touch? That is without the ice cube.

Ron W5RKN

also:  
rparsons@bga.com

---

## 60. Re: [DSP-93:1279] Temperature sensitivity of DSP-93 analog section.

From: Mills@huey.udel.edu  
Date: Mon, 7 Aug 95 11:34:33 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9508071134.aa18897@huey.udel.edu>  
Rendered body type: text/plain

Mike,

By my count, you are either number four or five that reports the heatstroke problem, with my being probably the first (of the first batch of kits). However, you may bring fresh news. I was most fortunate in having two DSP-93 units at the same time, one working okay, the other with symptoms exactly like yours. I swapped the analog boards with no effect; however, when I swapped all chips on the digital board except the EPROMs and CPU, BOTH (emphasis mine) boards worked just fine. I had suspicions of the PALs as well and replaced both on the digital board with no effect (before the chip swap which drove the bugs away). Now, you find chill of the analog I/O chip chases your bugs away. My own tentative conclusion is that there is a thermally exacerbated timing problem associated with the external bus and/or bus timing, perhaps due to triggering on the wrong clock phase somewhere. Having made that mistake myself more than once, that tentativity may suggest further investigation, preferably with a logic analyzer. Ordinarily, I would even offer to further that investigation myself, since I can probably have paw on ours; however, I am to flit to G-land in a couple of weeks on sabbatical and things are somewhat busy around here just now.

Dave

---

## 61. RE: Temperature sensitivity of DSP-93 analog section.

From: MIKE CHAMBERLAIN DTN 830-3476 <chamberlain@rdgeng.ENET.dec.com>  
Date: Mon, 7 Aug 95 14:14:46 PDT  
To: dsp-93@tapr.org  
Cc: chamberlain@rdgeng.ENET.dec.com  
Message-ID: <9508072114.AA14282@enet-gw.pa.dec.com>  
Rendered body type: text/plain

> Mike,

> By my count, you are either number four or five that reports the heatstroke  
> problem, with my being probably the first (of the first batch of kits).  
> However, you may bring fresh news. I was most fortunate in having two  
> DSP-93 units at the same time, one working okay, the other with symptoms  
> exactly like yours. I swapped the analog boards with no effect; however,  
> when I swapped all chips on the digital board except the EPROMs and  
> CPU, BOTH (emphasis mine) boards worked just fine. I had suspicions of  
> the PALs as well and replaced both on the digital board with no effect  
> (before the chip swap which drove the bugs away). Now, you find chill  
> of the analog I/O chip chases your bugs away. My own tentative conclusion  
> is that there is a thermally exacerbated timing problem associated with  
> the external bus and/or bus timing, perhaps due to triggering on the  
> wrong clock phase somewhere. Having made that mistake myself more than once,  
> that tentativity may suggest further investigation, preferably with a  
> logic analyzer. Ordinarily, I would even offer to further that investigation  
> myself, since I can probably have paw on ours; however, I am to flit to  
> G-land in a couple of weeks on sabbatical and things are somewhat busy  
> around here just now.

> Dave

Dave,

Thanks for your reply - I only registered with this list server last week so I'm not aware of all of the history, although I did plough my way through some of the archive. I had misunderstood the 'heatstroke' symptoms, I had interpreted it as total failure, and not partial loss of functionality. Consequently I was viewing it as a different problem. As you will have seen in my reply to Ron, a couple of minutes ago, in the short term, I'm looking for a component swap to fix or mask the problem, until I can find time to look at the problem in detail. I may have found myself a scope for next weekend, and may be able to

get a little closer then, although I'll be 'probing in the dark' without the PAL equations - do you know if they have been made available?

Thanks,

Mike - G3WPH

---

## 62. RE: Temperature sensitivity of DSP-93 analog section.

From: MIKE CHAMBERLAIN DTN 830-3476 <chamberlain@rdgeng.ENET.dec.com>  
Date: Mon, 7 Aug 95 14:14:20 PDT  
To: dsp-93@tapr.org  
Cc: chamberlain@rdgeng.ENET.dec.com  
Message-ID: <9508072113.AA14248@enet-gw.pa.dec.com>  
Rendered body type: text/plain

>Mike - G3WPH

>..

>> A carefully placed heat sink (an ice cube in a very small zip-lock  
>> bag) placed on U208, the TLC32044 brings the unit back to life in  
>> approximately 20 seconds. The unit continues to operate as long as  
>> I'm prepared to add ice!

>Interesting. The TLC32044C is speced for air temps from 0 to 70 C. I doubt  
>you are getting that hot.

>Does the chip feel hot to the touch? That is without the ice cube.

>Ron W5RKN

Ron, The TLC32044 is not getting unreasonably hot. My current thinking is that the problem falls into one of the following groups:

- As the TLC32044 warms up it is totally failing to perform some functional operation. I may be able to get a better handle on this if I can borrow a decent scope and look at the signals.
- As the TLC32044 warms up it's timing will change slightly, perhaps even into a window where a setup or hold timing requirement is violated. This is an interesting case as the TLC32044 may not be at fault, but cooling it may make timing changes that compensate for problems in other components. Possible root causes are:-
  - The TLC32044 is going out of specification when it warms up.
  - The U210 PAL is going out of spec when it warms up. I single out this component because it is one of the few components that is unique to TLC32044 I/O - remember that other I/O such as LEDTEST, Serial I/O, MEMTEST all continue to work satisfactorily.
  - One of the other components involved in I/O - perhaps even the TMS320C25 is going out of specification as it warms up.
  - Although I have no reason to suspect this, there could even be a design timing error.
- There may be a signal integrity problem, undershoot/overshoot etc. A change in device characteristics with temperature could accentuate such a problem. Again access to a scope may help me analyze this one quickly.

Without test equipment and component specifications I'm stuck in terms of really analysing the above options, that's why I'm having to push for the easy 'field service' solution of replacing a couple of chips and hoping that the problem goes away.

By the way, I forgot to mention in my original posting, the supply voltages all remain in specification when the unit has failed, and I have verified the socket and soldering.

Thanks for your help.

Mike - G3WPH

---

## 63. Re: [DSP-93:1284] Re: Temperature sensitivity of DSP-93 analog section.

From: ljs@west.net (L.J.Shepherd)  
Date: Mon, 07 Aug 1995 13:47:53 -0700



To: dsp-93@tapr.org  
Message-ID: <199508072049.NAA12948@acme.sb.west.net>  
Rendered body type: text/plain

Ron: I seem to recall that someone else had a "hot chip" problem....I think it was Dave Medley KI6QE. You may wish to check with him on his resolution of the thermal-shutdown problem he experienced.....73, Jim K60YY

>Mike - G3WPH  
>  
>..  
>> A carefully placed heat sink (an ice cube in a very small zip-lock  
>> bag) placed on U208, the TLC32044 brings the unit back to life in  
>> approximately 20 seconds. The unit continues to operate as long as  
>> I'm prepared to add ice!  
>  
>Interesting. The TLC32044C is speced for air temps from 0 to 70 C. I doubt  
>you are getting that hot.  
>  
>Does the chip feel hot to the touch? That is without the ice cube.  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>  
>  
>

---

#### 64. Re: [DSP-93:1286] RE: Temperature sensitivity of DSP-93 analog section.

From: Mills@huey.udel.edu  
Date: Mon, 7 Aug 95 18:09:34 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9508071809.aa19992@huey.udel.edu>  
Rendered body type: text/plain

Mike,

I can't help you with the equations, which are secreted under a blown readback fuze. That's too bad; it precludes us checking with Verilog, etc., for errors.

Dave

---

#### 65. AUDIO MISSING

From: bandy@server.elysian.net (John Bandy)  
Date: Mon, 7 Aug 95 20:57 CDT  
To: DSP-93@tapr.org  
Message-ID: <m0sfduz-0002UCC@server.elysian.net>  
Rendered body type: text/plain

To: DSP-93@TAPR.ORG  
Subject: AUDIO MISSING

Hello Ron Parsons,  
I finally got on the dsp-93 listserv as you suggested and have been reading the mail for some time. The no audio problem caught my eye since I had the same problem months ago and was unable to resolve it. Cover was always off by the way and I never had any audio. So I dug out the DSP-93 and fired it up and tried the ice cube with no luck. So I then lifted and reseated u208, u207, & u209 and now the leds don't correctly sequence on the various tests like they use to. Still getting the monitor prompt "\*" (TEST 1). Push RESET button and the yellow led blinks. Entering a "g" will cause the red and yellow leds to blink but red will not stay on and yellow will not stay off (TEST 2) like they use to.

Any help would be appreciated.

Will be in Dallas for the ARRL Digital Communications Conference 9-8.

73's

John W0UT

---

□ OLX 1.53 □ My E-Mail Address is: john.bandy@twsubbs.twsu.edu

---

#### 66. Re: [DSP-93:1260] Re: New DSP-93, Trouble

From: EARLWC@aol.com  
Date: Mon, 7 Aug 1995 23:59:05 -0400  
To: dsp-93@tapr.org  
Message-ID: <950807235904\_50280310@aol.com>  
Rendered body type: text/plain

Thanks for the assistance Ron,

I havn't taken the boards apart to trace the lines back from LED's 1 and 2 but will do so if it might help.  
I ran the TESTPORT program and LED 1 and 2 are still on, While LED's 3 thru 7 cycle.  
I then connected my spkr audio from the 736 to pins 8 & grd on Radio port 1, and ran TESTGAIN.  
LED's 1 & 2 still on, 3 off and 4 on. LED's 5,6 &7 apparently count binary. Starting from all off,  
7        on  
6        on  
7 &6    on  
5        on  
5 &6    on  
5 &7    on  
5,6 &7 on  
All this time I have audio at pin 11 of U203, nothing at pin 8 of 203 or following up to pin 7 of U202.

Thanks again.  
Getting a little discouraged  
Earl W9HAD

---

## 67. Re: [DSP-93:1290] AUDIO MISSING

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 8 Aug 1995 06:18:53 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4cf71bdd58@[204.181.160.73]>  
Rendered body type: text/plain

John W0UT

Glad you got mailing list capability.

Did you run the TESTxxxx programs just before lifting and reseating u208, u207, & u209?

Which of the TESTxxxx programs work properly now? Which fail? How?

What do you mean by "no audio problem"? Under what conditions?

Ron

>To: DSP-93@TAPR.ORG  
>Subject: AUDIO MISSING  
>  
>Hello Ron Parsons,  
>I finally got on the dsp-93 listserv as you suggested and have been  
>reading the mail for some time. The no audio problem caught my eye  
>since I had the same problem months ago and was unable to resolve it.  
>Cover was always off by the way and I never had any audio. So I dug out  
>the DSP-93 and fired it up and tried the ice cube with no luck. So I  
>then lifted and reseated u208, u207, & u209 and now the leds don't  
>correctly sequence on the various tests like they use to. Still getting  
>the monitor prompt "\*" (TEST 1). Push RESET button and the yellow led  
>blinks. Entering a "g" will cause the red and yellow leds to blink but  
>red will not stay on and yellow will not stay off(TEST 2) like they use  
>to.  
>Any help would be appreciated.  
>Will be in Dallas for the ARRL Digital Communications Conference 9-8.  
>73's  
>John W0UT  
>---  
> □ OLX 1.53 □ My E-Mail Address is: john.bandy@twsubbs.twsu.edu  
>

Ron W5RKN

also:  
rparsons@bga.com

## 68. Re: [DSP-93:1291] Re: New DSP-93, Trouble

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 8 Aug 1995 06:21:33 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac4cf8151810@[204.181.160.73]>  
Rendered body type: text/plain

Earl,

Don't get discouraged until you do some more investigation.

You shouldn't have to take the boards to trace from the LEDs. Just follow via the schematic.

>All this time I have audio at pin 11 of U203, nothing at pin 8 of 203 or  
>following up to pin 7 of U202.

Check the select pins of U203. (1, 15, 16). Are they correct?

Ron

>Thanks for the assistance Ron,  
>  
>I havn't taken the boards apart to trace the lines back from LED's 1 and 2  
>but will do so if it might help.  
>I ran the TESTPORT program and LED 1 an 2 are still on, While LED's 3 thru 7  
>cycle.  
>I then connected my spkr audio from the 736 to pins 8 & grd on Radio port 1,  
>and ran TESTGAIN.  
>LED's 1 & 2 still on, 3 off and 4 on. LED's 5,6 &7 apparently count binary.  
>Starting from all off,  
>7       on  
>6       on  
>7 &6    on  
>5       on  
>5 &6    on  
>5 &7    on  
>5,6 &7 on  
>All this time I have audio at pin 11 of U203, nothing at pin 8 of 203 or  
>following up to pin 7 of U202.  
>  
>Thanks again.  
>Getting a little discouraged  
>Earl W9HAD

Ron W5RKN

also:  
rparsons@bga.com

---

## 69. RE: [DSP-93:1282] RE: Hypothesis on heatstroke

From: Bob Smith <rsmith@internetmci.com>  
Date: Tue, 08 Aug 1995 08:00:29 -0400  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BA6575.4ADD3520@usr11-dialup19.Atlanta.mci.net>  
Rendered body type: text/plain

>>>Have you done the tests outlined in the Build Updates regarding power  
supply balancing?

No I have not - have seen no reference in the lit to that proceedure.

>>>Also you had an attachment that wasn't decoded????????  
Have no idea what that was Ron.

-----  
From: Ronald G. Parsons[SMTP:w5rkn@amsat.org]  
Sent: Monday, August 07, 1995 10:19 AM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1282] RE: Hypothesis on heatstroke

Bob Smith  
>My voltage reg IC's get awfully hot - could that cause other componants to  
>get hotter then spec'd - especially with the cover on?  
>-----

Have you done the tests outlined in the Build Updates regarding power  
supply balancing?

Also you had an attachment that wasn't decoded???????

Ron W5RKN

also:  
rparsons@bga.com

---

## 70. Re: [DSP-93:1294] RE: Hypothesis on heatstroke

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 8 Aug 1995 11:02:28 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4d3682c2e9@[204.96.0.75]>  
Rendered body type: text/plain

Bob Smith

>  
>>>>Have you done the tests outlined in the Build Updates regarding power  
>supply balancing?  
>  
>No I have not - have seen no reference in the lit to that procedure.

Build Updates are issued periodically on this mailing list and are archived at

ftp://ftp.tapr.org/tapr/dsp93/updates

>>>>Also you had an attachment that wasn't decoded???????  
>Have no idea what that was Ron.

It was present with your last note also.

>----- =\_NextPart\_000\_01BA6575.4AFEC6E0  
>Content-Type: application/x-tnef  
>Content-Transfer-Encoding: base64  
>  
>eJ8+IjcNAQaQCAAEAAAAAABAAEAAQeQBGAIAAAASQAQAAAAADoAAENGAAQAAgAAAAIAAgABBJAG  
>AAGBAAAABAAAADAAAAAADAADAAACwAPDgAAAAACAf8PAQAAAD0AAAAAAGSsfPL6jEBmdbgDd  
>...  
>7GsHQBCA0k4Fck4x0fJA+mJfQC5VESLsTZ8tLzPmC25FF2EAcSAAAwAQEAMAAAAADABEQAAAAEEAA  
>BzDAw9dbhmW6AUACDDAw9dbhmW6AR4APQABAAAABQAAAFJF0iAAAAAT1Y=  
>  
>----- =\_NextPart\_000\_01BA6575.4AFEC6E0--

Ron W5RKN

also:  
rparsons@bga.com

---

## 71. Re: [DSP-93:1293] Re: New DSP-93, Trouble

From: EARLWC@aol.com  
Date: Tue, 8 Aug 1995 13:54:39 -0400  
To: dsp-93@tapr.org  
Message-ID: <950808135433\_50587557@aol.com>  
Rendered body type: text/plain

Back again Ron,

Thanks for staying with me. It would appear I should get a TI spec cat' so I would know a little more about whats going on. I checked the select pins 1, 15 and 16 on U203 and I think they are ok. They each are pulsed, which I assume is clock controlled. All are the same.

I continued on to U201 and I do have something here. Pins 1 and 16 look the same as on U203 but 15 appears to have a overlapping pulse, off time short on time long. Looking at top there appears to be 2 pulses overlapping.

Going to U204 I see same trouble on 14 (same as 15 on U203) and 13 control for LED 2. I removed all associated chips checked for possible shorted lines but all seemed ok.

I dont know if this is related to no audio or another problem. It does seem to be connected to the #2 led always on.

Thanks Ron.

Earl W9HAD

---

## 72. Re: [DSP-93:1296] Re: New DSP-93, Trouble

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 8 Aug 1995 14:45:36 -0500

To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4d6da6b77d@[204.96.0.78]>  
Rendered body type: text/plain

>Back again Ron,  
> Thanks for staying with me. It would appear I should get a TI spec cat' so I  
>would know a little more about whats going on. I checked the select pins 1,  
>15 and 16 on U203 and I think they are ok. They each are pulsed, which I  
>assume is clock controlled. All are the same.

Wrong. The select pins (1, 16, 15) are latched by U204. The values will  
vary depending on the port selected. For example:

|       | 1  | 16 | 15 |
|-------|----|----|----|
| reset | hi | lo | lo |
| PKTP1 | hi | lo | hi |
| PKTP2 | hi | hi | hi |

Check these out! They should be steady once the I/O port have been set.

>I continued on to U201 and I do have something here. Pins 1 and 16 look the  
>same as on U203 but 15 appears to have a overlapping pulse,off time short on  
>time long. Looking at top there appears to be 2 pulses overlapping.  
>Going to U204 I see same trouble on 14 (same as 15 on U203) and 13 control  
>for LED 2. I removed all associated chips checked for possible shorted lines  
>but all seemed ok.  
>I dont know if this is related to no audio or another problem. It does seem  
>to be connected to the #2 led always on.  
>

Sounds like you may have a problem back on the U204 latch.

Ron W5RKN

also:  
rparsons@bga.com

---

### 73. Power unbalance.

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@listserv.gmd.de>  
Date: Tue, 8 Aug 95 23:07:42 EST  
To: dsp-93@TAPR.ORG  
Message-ID: <199508082109.QAA17204@sys1.tapr.org>  
Rendered body type: text/plain

I have now finished the two boards, connected them together and  
made the first test without connecting the PC.  
The two outer LEDs are ON and everything looks fine apart from  
a heavy unbalance on the +5 V supply.

Board 1 regulator gives 5.05 V  
Board 2 regulator gives 4.92 V  
Connecting the boards together gives 4.95 V after the 0.22 ohm  
resistors. Voltage drop on board one is 100 mV, and 0 mV on board 2.

I guess the best solution is to buy another two or three regulators  
7805 in town tomorrow and try to get a matching pair.  
I have also seen that there is a 78S05 rated 2 A. Should I  
buy the 78S05 type or stay with the 7805?

Boris Smeds DJ0EX SM0GJ

End of Message

---

### 74. Re: [DSP-93:1298] Power unbalance.

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 8 Aug 1995 18:18:33 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac4da02f96f7@[204.181.160.93]>  
Rendered body type: text/plain

Boris Smeds,

I got into a similar situation after I accidentally broke one of the  
original 7805 regulators. I calculated the increase in the .22 ohm resistor  
from the higher voltage 7805 to cause the load to even out. In my case, I  
increased one of the resistors to about 0.5 ohm. Then both were happy. This  
was easier than removing the 7805 to try to get a matched pair.

Ron

>I have now finished the two boards, connected them together and  
>made the first test without connecting the PC.  
>The two outer LEDs are ON and everything looks fine apart from  
>a heavy unbalance on the +5 V supply.  
>  
>Board 1 regulator gives 5.05 V  
>Board 2 regulator gives 4.92 V  
>Connecting the boards together gives 4.95 V after the 0.22 ohm  
>resistors. Voltage drop on board one is 100 mV, and 0 mV on board 2.  
>  
>I guess the best solution is to buy another two or three regulators  
>7805 in town tomorrow and try to get a matching pair.  
>I have also seen that there is a 78S05 rated 2 A. Should I  
>buy the 78S05 type or stay with the 7805?  
>  
>Boris Smeds DJ0EX SM0GJ  
>  
>End of Message

Ron W5RKN

also:  
rparsons@bga.com

---

## 75. Digital voice page updated (fwd)

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 8 Aug 1995 20:18:21 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199508090118.UAA03424@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to Phil Karn:  
>From daemon Tue Aug 8 16:26:29 1995  
Date: Tue, 8 Aug 1995 12:10:42 -0700  
From: Phil Karn <karn@unix.ka9q.ampr.org>  
Message-Id: <199508081910.MAA04769@unix.ka9q.ampr.org>  
To: amsat-bb@amsat.org  
Subject: Digital voice page updated

I've updated my digital voice demo web page

<http://www.qualcomm.com/people/pkarn/voicedemo>

with samples of speech encoded in 13kb/s GSM 06.10, 4.8kb/s FED-STD-1016 CELP, and 8kb/s Qualcomm QCELP (IS-96a). Each sample is paired with a simulated SSB signal having the same overall signal power.

I'm still working on 2.4kb/s FED-STD-1015 LPC and Qualcomm's newer 13kb/s QCELP. When I obtain these, I'll add them.

Phil

---

## 76. HELP: PK900 Hookup

From: Bob Smith <rsmith@internetmci.com>  
Date: Tue, 08 Aug 1995 20:35:19 -0400  
To: "'List DSP-93'" <dsp-93@tapr.org>  
Message-ID: <01BA65CE.8E734FA0@usr12-dialup27.Atlanta.mci.net>  
Rendered body type: text/plain

Trying to hook up the DSP93 to the PK900. Saved many messages on this from a month ago but none told specifically how to do it. Can some one help me out here who's done it already. Thanks.

Also trying to use Win Packrat any hints there would be much appreciated as well.

Thanks.

---

## 77. Crystal mounting

From: "Lawrence F. Johnston" <ljohnsto@carbon.cudenver.edu>  
Date: Tue, 8 Aug 1995 20:22:37 -0600 (MDT)  
To: dsp93 <dsp-93@tapr.org>  
Message-ID: <Pine.OSF.3.91.950808201516.19599A-100000@carbon.cudenver.edu>  
Rendered body type: text/plain

I'm not sure about the correct method to mount the crystal, X201.

I've read the assembly manual, page 20, paragraph titled "Crystal".

The crystal in my kit has long enough leads. But what about the metal pad on the PCB? Is the crystal case supposed to be soldered to that pad, or just rest on it, or what?

Larry, W0EIE

---

## 78. Re: [DSP-93:1302] Crystal mounting

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 8 Aug 1995 22:30:26 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4ddb6f8271@[204.96.0.74]>  
Rendered body type: text/plain

>I'm not sure about the correct method to mount the crystal, X201.  
>  
>I've read the assembly manual, page 20, paragraph titled "Crystal".  
>The crystal in my kit has long enough leads. But what about the  
>metal pad on the PCB? Is the crystal case supposed to be soldered  
>to that pad, or just rest on it, or what?  
>  
>Larry, W0EIE

>From the Assembly manual, page 20:

"Crystal  
NOTE: Some crystals will not have a long enough lead to be soldered into the PCB. If this is the case, solder a 1" piece of lead (from a previous resistor or cap) in the hole provide for crystal mounting. Then form the wire flat down on the PCB so the crystal will rest near the PCB surface but on the wire. Next form the crystal leads so they will go into the proper holes. Now solder the crystal leads. Next form the short wire up and over the back end of the crystal and then soldered it to the can trim off any excess wire. Be careful not to overheat the crystal, since overheating can ruin it.

The crystal should lay flat (on its side) against the surface of the PC board. Do not bend the leads sharply at the body of the crystal. Instead, form a large radius curve with the leads to act as a strain relief."

Perhaps not crystal clear (sorry, I couldn't resist), but the case wire should be soldered to the PCB.

Ron W5RKN

also:  
rparsons@bga.com

---

## 79. Note from Arne Luehrs

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 9 Aug 1995 11:36:56 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199508091636.LAA05040@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to Arne Luehrs:  
From: Arne Luehrs <arne@gplarne2.grenoble.hp.com>  
Date: Wed, 9 Aug 95 17:48:26 +0100  
To: wd5ivd@tapr.org  
Subject: Re: TAPR Products

Hi Greg,

(TAPR TB kit question deleted...)

Thanks!  
73's  
Arne

P.S. The DSP93 is unbeatable in kit quality, only the old Heathkit stuff can be called as good. Worked 10 hours after reception of the package and suffice it to say 100% functional ever since. (received last friday (Aug 4th) and operational since sunday.) No heatstroke nor other of the common mailinglist phenomena,,, cross my fingers...

---

## 80. Re: [DSP-93:1297] Re: New DSP-93, Trouble

From: EARLWC@aol.com  
Date: Wed, 9 Aug 1995 14:05:02 -0400  
To: dsp-93@tapr.org  
Message-ID: <950809140457\_70129853@aol.com>  
Rendered body type: text/plain

Hi Ron

Sorry about taking up so much of you time. The select pins 1,15 and 16 are not steady state but switching. I changed 204 at the beginning. I also moved chip from 214 (also a 74ALS573) to be sure replacement is ok. It has the extension of P at end rather than CN. If I did do damage with probe at JP203 on Pin 19, I wonder about chops U112,113 and 210. If this seem a possiblity I wonder if I can get them from TAPR, 210 in particular as it seems to be marked special. The oher 2 could be availabe at other sources.

Still trying,

Earl

---

## 81. Re: [DSP-93:1305] Re: New DSP-93, Trouble

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 9 Aug 1995 13:50:50 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4eb12e8265@[204.96.0.46]>  
Rendered body type: text/plain

Earl,

Don't worry about my time. Let's just try to get your unit working.

U210, U112 and U113 are unique to the DSP-93. You would have to contact TAPR to see if they have "extras". tapr@tapr.org.

I appears that U204 is not latching the proper signals to set the addressing for U210 and U203. Do you see the clock pulses on pin 11 of U204 and U206? I'm not sure how often they happen. Lack of proper clocking would cause the problem with LEDs 1 & 2. But LEDs 3&4 are latched out of U206. Ditto the UP/DN/PTT. Does TESTPORT work?

Have you run all the TESTxxxx programs? Which work and which do not (and how?).

Ron

>Hi Ron

>

>Sorry about taking up so much of you time. The select pins 1,15 and 16 are >not steady state but switching. I changed 204 at the beginning. I also moved >chip from 214 (also a 74ALS573) to be sure replacement is ok. It has the >extension of P at end rather than CN. If I did do damage with probe at JP203 >on Pin 19, I wonder about chops U112,113 and 210. If this seem a possiblity I >wonder if I can get them from TAPR, 210 in particular as it seems to be >marked special. The oher 2 could be availabe at other sources.

>

>Still trying,

>

>Earl

Ron W5RKN

also:  
rparsons@bga.com

---

## 82. (Fwd) [DSP-93:1285] Re: Temperature sensitivity of DSP-93 ana

From: "Jim Lynch" <k4gvo@america.net>  
Date: Wed, 9 Aug 1995 20:32:29 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508100043.AAA14772@america.net>  
Rendered body type: text/plain

----- Forwarded Message Follows -----

Date: Mon, 7 Aug 1995 10:48:18 -0500  
Reply-to: dsp-93@tapr.org  
From: Mills@huey.udel.edu



To: dsp-93@tapr.org  
Subject: [DSP-93:1285] Re: Temperature sensitivity of DSP-93 analog section.

Mike,

By my count, you are either number four or five that reports the heatstroke problem, with my being probably the first (of the first batch of kits). However, you may bring fresh news. I was most fortunate in having two DSP-93 units at the same time, one working okay, the other with symptoms exactly like yours. I swapped the analog boards with no effect; however, when I swapped all chips on the digital board except the EPROMs and CPU, BOTH (emphasis mine) boards worked just fine. I had suspicions of the PALs as well and replaced both on the digital board with no effect (before the chip swap which drove the bugs away). Now, you find chill of the analog I/O chip chases your bugs away. My own tentative conclusion is that there is a thermally exacerbated timing problem associated with the external bus and/or bus timing, perhaps due to triggering on the wrong clock phase somewhere. Having made that mistake myself more than once, that tentativity may suggest further investigation, preferably with a logic analyzer. Ordinarily, I would even offer to further that investigation myself, since I can probably have paw on ours; however, I am to flit to G-land in a couple of weeks on sabbatical and things are somewhat busy around here just now.

Dave

Not that it makes a lot of difference since Dave cooked both units for a while after swapping the chips, but I haven't had mine on for more than 3 hours since he returned it, so it might one day start getting the heatstroke problem back, but I doubt it. I guess I'll crank it up and leave it on for a week or so and see.

Jim.

Oh, I'm the owner of the one that Dave swapped with, in case this message doesn't seem to make any sense..

|             |                   |             |
|-------------|-------------------|-------------|
| Jim Lynch   | Fayetteville, GA  | K4GVO       |
| '86 GL1200I | k4gvo@america.net | 44.36.34.20 |

---

### 83. Re: [DSP-93:1306] Re: New DSP-93, Trouble

From: bruceb@eskimo.com (Bruce L. Bevelheimer)  
Date: Wed, 9 Aug 1995 21:04:43 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508100404.VAA21271@mail.eskimo.com>  
Rendered body type: text/plain

Ron & Earl,

I had almost the same symptoms (LED's 1&2, similar behavior for U204) and just tracked it down to a bad connection at pin 20, U112. I followed pin 11 of U204 to pin 19 of JP203 to U112 and saw a lousy solder joint. Now the LED's work properly!

Unfortunately, just after I verified that the unit comes on and resets I stopped getting serial data! Turning the DSP on, hitting return in D93WE, etc, no longer gives me a prompt. Nothing. RTS is still high, but it ain't talking. I tried another Terminal program that I know works with the DSP93 with the same results. Any idea where I should look, Ron?

>Earl,  
>  
>Don't worry about my time. Let's just try to get your unit working.  
>  
>U210, U112 and U113 are unique to the DSP-93. You would have to contact  
>TAPR to see if they have "extras". tapr@tapr.org.  
>  
>I appears that U204 is not latching the proper signals to set the  
>addressing for U210 and U203. Do you see the clock pulses on pin 11 of U204  
>and U206? I'm not sure how often they happen. Lack of proper clocking would  
>cause the problem with LEDs 1 & 2. But LEDs 3&4 are latched out of U206.  
>Ditto the UP/DN/PTT. Does TESTPORT work?  
>  
>Have you run all the TESTxxxx programs? Which work and which do not (and how?).  
>  
>Ron  
>  
>  
>>Hi Ron

>>  
>>Sorry about taking up so much of you time. The select pins 1,15 and 16 are  
>>not steady state but switching. I changed 204 at the beginning.I also moved  
>>chip from 214 (also a 74ALS573) to be sure replacement is ok. It has the  
>>extension of P at end rather then CN. If I did do damage with probe at JP203  
>>on Pin 19, I wonder about chops U112,113 and 210. If this seem a possiblity I  
>>wonder if I can get them from TAPR, 210 in particular as it seems to be  
>>marked special. The oher 2 could be availabe at other sources.  
>>  
>>Still trying,  
>>  
>>Earl  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>  
>  
>  
>

---

#### 84. Re: [DSP-93:1308] Re: New DSP-93, Trouble

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 10 Aug 1995 07:19:26 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4fa8f5b959@[204.96.0.143]>  
Rendered body type: text/plain

Bruce,  
>  
>I had almost the same symptoms (LED's 1&2, similar behavior for U204) and  
>just tracked it down to a bad connection at pin 20, U112. I followed pin 11  
>of U204 to pin 19 of JP203 to U112 and saw a lousy solder joint. Now the  
>LED's work properly!  
>  
>Unfortunately, just after I verified that the unit comes on and resets I  
>stopped getting serial data! Turning the DSP on, hitting return in D93WE,  
>etc, no longer gives me a prompt. Nothing. RTS is still high, but it ain't  
>talking. I tried another Terminal program that I know works with the DSP93  
>with the same results. Any idea where I should look, Ron?  
>

I had that same problem which I tracked down to a bad solder joint around  
the UART. Especially on pins on the ground and power plane, there is a lot  
of thermal inertia. It is easy to get a poor (but good looking) joint.

Check all the ground and power pins.

Ron W5RKN

also:  
rparsons@bga.com

---

#### 85. Re: [DSP-93:1305] Re: New DSP-93, Trouble

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 10 Aug 1995 09:35:29 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac4fc6a4b2fd@[204.96.0.138]>  
Rendered body type: text/plain

Earl,

You should see pulses on U204, pin 11, each time port 7h is OUTputted to  
(excuse the English). From the Programming Manual, you see that port 7h  
controls the switching of the input ports, programmable gain, and LEDs 1  
and 2. Thus for TESTLEDS, you should see a pulse every time LED 1 or 2 goes  
on or off. Also in TESTGAIN, you should see a pulse every time the gain  
changes.

You should see pulses on U206, pin 11, each time port 0Bh is OUTputted to.  
>From the Programming Manual, you see that port 0Bh controls the switching  
of the UP/DN/PTT lines, and LEDs 3 and 4. Thus for TESTLEDS, you should see  
a pulse every time LED 3 or 4 goes on or off. Also in TESTPORT, you should  
see a pulse every time UP/DN/PTT changes.

Trace the path to U204 and U206, pin 11 back to the source if you see problems.

>Hi Ron  
>  
>Sorry about taking up so much of you time. The select pins 1,15 and 16 are  
>not steady state but switching. I changed 204 at the beginning.I also moved  
>chip from 214 (also a 74ALS573) to be sure replacement is ok. It has the  
>extension of P at end rather than CN. If I did do damage with probe at JP203  
>on Pin 19, I wonder about chops U112,113 and 210. If this seem a possiblity I  
>wonder if I can get them from TAPR, 210 in particular as it seems to be  
>marked special. The oher 2 could be availabe at other sources.  
>  
>Still trying.  
>  
>Earl  
  
Ron W5RKN  
  
also:  
rparsons@bga.com

---

## 86. Re: [DSP-93:1301] HELP: PK900 Hookup

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 10 Aug 1995 09:40:05 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac4fc9e3763a@[204.251.33.30]>  
Rendered body type: text/plain

Bob Smith

>Trying to hook up the DSP93 to the PK900. Saved many messages on this =  
>from a month ago but none told specifically how to do it. Can some one =  
>help me out here who's done it already. Thanks.  
>  
>Also trying to use Win Packrat any hints there would be much appreciated =  
>as well.  
>  
>Thanks.

I didn't see a response to your question, so I thought I'd at least respond. I believe the PK900 has a "standard" Modem Disconnect Header (MDH), so the usual hookup instructions should apply (see the Assembly Manual and the Build Updates). When you get it working, could you right it up in a format similar to the ones in the Build Update so others can profit from your experience.

I know nothing about Win Packrat, sorry.

Ron W5RKN

also:  
rparsons@bga.com

---

## 87. RE: [DSP-93:1311] Re: HELP: PK900 Hookup

From: Bob Smith <rsmith@internetmci.com>  
Date: Thu, 10 Aug 1995 14:41:44 -0400  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BA672F.73D25D00@usr7-dialup1.Atlanta.mci.net>  
Rendered body type: text/plain

Thanks Ron, I seem to have it working just like the 20 pin diagram. Is this binary - it either works or doesn't? I ask because I am having some problems trying to get connected to the 9600 kps packet cluster as part of my testing. Of course, it could also be one of the million or so other paramters I need to check - just thought that I would like to eliminate this one.

Thanks.  
Vry 73's

-----  
From: Ronald G. Parsons[SMTP:w5rkn@amsat.org]  
Sent: Thursday, August 10, 1995 10:42 AM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1311] Re: HELP: PK900 Hookup

Bob Smith

>Trying to hook up the DSP93 to the PK900. Saved many messages on this =



end

---

## 88. Re: [DSP-93:1309] Re: New DSP-93, Trouble

From: bruceb@eskimo.com (Bruce L. Bevelheimer)  
Date: Thu, 10 Aug 1995 13:20:29 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508102020.NAA10073@mail.eskimo.com>  
Rendered body type: text/plain

Ron -

I've redone all the UART pins, as well as all those nearby, with no effect. I don't have the spec. on the UART so I don't know which pins are pwr. and gnd., but my guesses show good values. On U211, though, pins 10-15 all show hi and the chip is running quite warm. Should it?

73, Bruce  
W3GDZ

>Bruce,  
>>  
>>I had almost the same symptoms (LED's 1&2, similar behavior for U204) and  
>>just tracked it down to a bad connection at pin 20, U112. I followed pin 11  
>>of U204 to pin 19 of JP203 to U112 and saw a lousy solder joint. Now the  
>>LED's work properly!  
>>  
>>Unfortunately, just after I verified that the unit comes on and resets I  
>>stopped getting serial data! Turning the DSP on, hitting return in D93WE,  
>>etc, no longer gives me a prompt. Nothing. RTS is still high, but it ain't  
>>talking. I tried another Terminal program that I know works with the DSP93  
>>with the same results. Any idea where I should look, Ron?  
>>  
>  
>I had that same problem which I tracked down to a bad solder joint around  
>the UART. Especially on pins on the ground and power plane, there is a lot  
>of thermal inertia. It is easy to get a poor (but good looking) joint.  
>  
>Check all the ground and power pins.  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>  
>

---

## 89. Re: [DSP-93:1312] Re: HELP: PK900 Hookup

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 10 Aug 1995 15:40:25 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac501d67156a@[204.96.0.77]>  
Rendered body type: text/plain

>Thanks Ron, I seem to have it working just like the 20 pin diagram. Is  
>this binary - it either works or doesn't? I ask because I am having some  
>problems trying to get connected to the 9600 kps packet cluster as part of  
>my testing. Of course, it could also be one of the million or so other  
>parameters I need to check - just thought that I would like to eliminate  
>this one.  
>  
>Thanks.  
>Vry 73's  
>...  
>  
>Attachment converted: aOppie:WINMAIL.DAT (????/----) (0000BD36)

First, what was in the attachment WINMAIL.DAT you included?

Second, what radio are you using? We have noticed a problem with the Icom rigs (and probably others that use the same FM detector chip). When the transceiver goes between transmit and receive, there is a DC level shift of about 0.5 volts on the signal out of the detector. Depending on the time constant of the circuit (including the capacitor on the input to the DSP-93) this level shift may block the first few bits of the packet from the station you are trying to connect to. Try decreasing the capacitance (put a 1-2 mfd cap in series with the receive audio) and see if this helps.

Third, what is the signal level of the audio at TP1 on the DSP-93. At 9600 bps, you want no more than 1 V p-p.

Fourth, do the above and get back with me.

Ron W5RKN

also:  
rparsons@bga.com

---

## 90. Re: [DSP-93:1313] Re: New DSP-93, Trouble

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 10 Aug 1995 16:43:30 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac502ceebb89@[204.96.0.68]>  
Rendered body type: text/plain

Bruce,

>Ron -  
>  
>I've redone all the UART pins, as well as all those nearby, with no effect.  
>I don't have the spec. on the UART so I don't know which pins are pwr. and  
>gnd., but my guesses show good values. On U211, though, pins 10-15 all show  
>hi and the chip is running quite warm. Should it?  
>  
>73, Bruce  
> W3GDZ  
>

Resting with a terminal program connected and running, 10-15 are respectively,  
hi, lo, hi, lo, hi, hi.

With data transfer in progress, (a dump of memory) 10-15 are respectively,  
hi, lo, hi, lo, data, hi.

U211 is not warm.

Ron W5RKN

also:  
rparsons@bga.com

---

## 91. Up and running tests.

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@listserv.gmd.de>  
Date: Thu, 10 Aug 95 23:54:13 EST  
To: dsp-93@TAPR.ORG  
Message-ID: <199508102154.QAA08557@sys1.tapr.org>  
Rendered body type: text/plain

Ron,

After finding the unbalance in the +5V regulators I finally did  
replace one of them and now there is one to two ratio in the  
current between the two. I did not really like your idea to  
increase the series resistor, which would have given me a voltage  
below 4.9 V. There was no difficulty to remove the regulator  
since I first cut all the legs off before de-soldering them one  
by one.

I measured the temperature on the regulators and had 68 C on the  
digital board and 55 C on the analogue board with 28 C ambient  
room temperature. I think this fits well to the heat sink size.  
The DC voltage is a bit over 11 V before the regulator.

Tests 1 to 4 have passed without problem. The only drawback  
I found was that it is required to operate the PC at 19.2  
kbps. This means I could not use the old XT or laptop which  
only go up to 9.6 kbps, and now I use a more modern 386  
PC.

Regards Boris DJ0EX SM0GJ

End of Message

## 92. [DSP-93:1292] Re: AUDIO M

From: bandy@server.elysian.net (John Bandy)  
Date: Thu, 10 Aug 95 19:39 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0sg8g-00031WC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: [DSP-93:1292] Re: AUDIO M

Hello Ron,  
For the benefit of the other readers. I'm convinced now after further testing the lifting and reseating had nothing to do with the failure. It had a 'heatstroke' about the time I was lifting and reseating. After allowing it to cool for 24 hours it passed tests #1 thru 4 ok. It passed test 5 & 6 ok except it did not produce any audio sounds which is consistent with these tests in the past. It did not pass test #7 but it did pass it last March so I suspected heatstroke and confirmed it when it fail test #4 upon running it again. No scope was used.

73's John W0UT

W>John W0UT

W>Glad you got mailing list capability.

W>Did you run the TESTxxxx programs just before lifting and reseating u208, >u207, & u209?

W>Which of the TESTxxxx programs work properly now? Which fail? How?

W>What do you mean by "no audio problem"? Under what conditions?

W>Ron

W>>To: DSP-93@TAPR.ORG  
>>Subject: AUDIO MISSING  
>>  
>>Hello Ron Parsons,  
>>I finally got on the dsp-93 listserv as you suggested and have been  
>>reading the mail for some time. The no audio problem caught my eye  
>>since I had the same problem months ago and was unable to resolve it.  
>>Cover was always off by the way and I never had any audio. So I dug out  
>>the DSP-93 and fired it up and tried the ice cube with no luck. So I  
>>then lifted and reseated u208, u207, & u209 and now the leds don't  
>>correctly sequence on the various tests like they use to. Still getting  
>>the monitor prompt "\*" (TEST 1). Push RESET button and the yellow led  
>>blinks. Entering a "g" will cause the red and yellow leds to blink but  
>>red will not stay on and yellow will not stay off (TEST 2) like they use  
>>to.  
>>Any help would be appreciated.  
>>Will be in Dallas for the ARRL Digital Communications Conference 9-8.  
>>73's  
>>John W0UT  
>>---  
>>=9C OLC 1.53 =9C My E-Mail Address is: john.bandy@twsubbs.twsu.edu  
>>

W>Ron W5RKN

W>also:  
>rparsons@bga.com  
---  
□ OLC 1.53 □ My E-Mail Address is: john.bandy@twsubbs.twsu.edu

## 93. Re: [DSP-93:1310] Re: New DSP-93, Trouble

From: EARLWC@aol.com  
Date: Thu, 10 Aug 1995 21:37:39 -0400  
To: dsp-93@tapr.org  
Message-ID: <950810213659\_52289380@aol.com>  
Rendered body type: text/plain

Ron,

Thanks for all the readings. Checking the clock pulse at pin 11 (also 19 on jp203) it is locked hi. I can see the clock running at J100 and also pin 8 on U115. I hope this indicates trouble at 1 or all of U 112,113 and 210 and no further. Hopefully they are or will be shipped from TAPR. I think I'll

take a break and do something else, like woodworking.

Earl, W9HAD

---

#### 94. Re: [DSP-93:1308] Re: New DSP-93, Trouble

From: EARLWC@aol.com  
Date: Thu, 10 Aug 1995 21:37:35 -0400  
To: dsp-93@tapr.org  
Message-ID: <950810213650\_52289282@aol.com>  
Rendered body type: text/plain

Hi Bruce,

Thanks for input I'll keep it in mind. I hope your problems are solved.

Earl W9HAD

---

#### 95. Re: [DSP-93:1318] Re: New DSP-93, Trouble

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 10 Aug 1995 21:23:07 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d03ac506e8323eb@[204.181.160.7]>  
Rendered body type: text/plain

Earl,

The "clock" pulse on pin 11 of U204 and U206 is NOT the "clock" that you find on U115-8. The latter is a 20 or 40 MHz pulse train that clocks the processor.

The "clock" on U204-11 occurs only when an OUT instruction is executed to change a value on an IO port. For example, on TESTLEDS, the pulse on U204-11 occurs about once per second ONLY when LED1 & 2 change.

Look again. A logic probe on "pulse" setting is the easiest to use.

Ron

>Ron,

>

>Thanks for all the readings. Checking the clock pulse at pin 11 (also 19 on  
>jp203) it is locked hi. I can see the clock running at J100 and also pin 8  
>on U115. I hope this indicates trouble at 1 or all of U 112,113 and 210 and  
>no further. Hopefully they are or will be shipped from TAPR. I think I'll  
>take a break and do something else, like woodworking.

>

>Earl, W9HAD

Ron W5RKN

also:  
rparsons@bga.com

---

#### 96. Re: [DSP-93:1318] Re: New DSP-93, Trouble

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 10 Aug 1995 23:30:14 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508110430.XAA03500@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

Do we really think that all the GALS are cooked ? That is a nice sum in cash for all three. Those 10ns GALS are expensive.

Cheers - Greg

According to EARLWC@aol.com:

>

> Ron,

>

> Thanks for all the readings. Checking the clock pulse at pin 11 (also 19 on  
> jp203) it is locked hi. I can see the clock running at J100 and also pin 8  
> on U115. I hope this indicates trouble at 1 or all of U 112,113 and 210 and  
> no further. Hopefully they are or will be shipped from TAPR. I think I'll  
> take a break and do something else, like woodworking.

>

> Earl, W9HAD

>



## 97. Re: [DSP-93:1321] Re: New DSP-93, Trouble

From: EARLWC@aol.com  
Date: Fri, 11 Aug 1995 09:22:15 -0400  
To: dsp-93@tapr.org  
Message-ID: <950811092213\_71829797@aol.com>  
Rendered body type: text/plain

I think so, I don,t have much choice. It maybe just 2 but I don,t know. I talked to Dorothy and I guess they are being shipped. It would be nice if I could return anything I don,t use.

Thanks for your concern,

Earl

---

## 98. Doppler & FT736 & 9600 Baud

From: Arne Luehrs <arne@gplarne2.grenoble.hp.com>  
Date: Fri, 11 Aug 95 16:37:16 +0100  
To: dsp-93@tapr.org  
Message-ID: <9508111537.AA00761@gplarne2.grenoble.hp.com>  
Rendered body type: text/plain

Hi everybody,

Well there I am, a wonderfull DSP-94 (number 103 of the second series) in my hands and having quite some fun with it.

The Box performs great and I can only say PFWEWW what a box! It's big fun testing all the different modes. No heatstroke, all functions green!

BUT...

Well you have to want the impossible I think..

When I started using the unit on the 9600 baud birds it soon became apparent that it is not the DSP-93 that does the doppler correction but that someone else has to provide this. My hand has proven to be a good tool, coordinated by input from my eye that stays glued on the deviation meter needle and on the dcd/data leds of the TNC/DSP-93 combination, all this controlled, filtered and handeled by a leftover piece of brain.

Now it so happens that I can not leave these pieces of myself at home whilst going to work so here comes the big question:  
How to do doppler tracking on a FT736 without undue operator intervention.

In a dim corner of my mind i seem to remember people talking about op-amps connected to the discriminator output an coupeled to a piece of tnc logic and going back to the mic up/down switches but....

So what are the options?

Can the DSP-93 concievably handle this (it connects to the discriminator, it generates the DCD and it connects to the mic up/down lines.) We would have to couple the signal DC of course and add some logic. Any Ideas??

As we have information on the signal quality.. we can maybe think about adaptive tracking (the doppler reversal phenomenon at the horizon edge par example...)

Let's see who can help me here... I'm willing to butcher and invent where necessary, but need some ground ideas first.

Happy DSP'ing  
Arne F/pa0kkv Luehrs

---

## 99. Re: [DSP-93:1323] Doppler & FT736 & 9600 Baud

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 11 Aug 1995 20:56:21 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac51b889addd@204.96.0.132>  
Rendered body type: text/plain

Arne,

>Well there I am, a wonderfull DSP-94 (number 103 of the second series) in >my hands and having quite some fun with it.

Glad to hear it.

>So what are the options?

>Can the DSP-93 concievably handle this (it connects to the discriminator,

>it generates the DCD and it connects to the mic up/down lines.) We would  
>have to couple the signal DC of course and add some logic. Any Ideas??  
>  
>As we have information on the signal quality.. we can maybe think about  
>adaptive tracking (the doppler reversal phenomenon at the horizon edge  
>par example...)

Of course, with the PSK modems, the DSP-93 does do the Doppler correction.  
It is much more critical with PSK. And there is time available after  
doing the demodulation of the signal to do the frequency stuff. After all,  
the data rate is only 1/4 that of 9600.

There is almost NO time left in the sample interval with the 9600 FSK modem  
software. That's not to say it couldn't be done, but it would take major  
optimization of the code.

The accuracy needed for the FM signals is much less than with the PSK. Most  
satellite stations do it via calculation of the Doppler using the Keplerian  
elements and a device between the computer and the radio to handle the  
frequency updating.

I suppose you could build a device with some op-amps and other circuitry to  
do closed loop frequency control. But that would be external to (the  
current) DSP-93.

Build it and we will come.

Ron W5RKN

also:  
rparsons@bga.com

---

## 100. Re: [DSP-93:1323] Doppler & FT736 & 9600 Baud

From: dmedley@indirect.com (David Medley)  
Date: Fri, 11 Aug 1995 21:13:49 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508120413.VAA29077@bob.indirect.com>  
Rendered body type: text/plain

>Let's see who can help me here... I'm willing to butcher and invent where  
>necessary, but need some ground ideas first.  
>

Hi Arne. Well I use a TAPR Trakbox to control both antennas and the Doppler  
via the 736. A Kansas City tracker also does perhaps an even better job.  
However perhaps you don't want to go this route and I look forward with  
interest to see what you come up with.  
Regards David Medley

---

## 101. Re: [DSP-93:1323] Doppler & FT736 & 9600 Baud

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Sat, 12 Aug 1995 13:03:50 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508121323.JAA00912@camel.campbell.edu>  
Rendered body type: text/plain

Arne,

I have used two different methods of correcting for doppler with my TS-790A.  
The first one is quite simple, but I am afraid it will not work with the  
FT-736. I use the SCAN feature of the SUB band window with the squelch to  
follow the 9600 birds. The sub band scans until a 9600 bird breaks the  
squelch. As the frequency of the bird goes down, the sub band scans down  
with it. It actually works quite well, but not as well as true serial  
control. But it does allow for multiple passes of one bird with NO serial  
control at all.

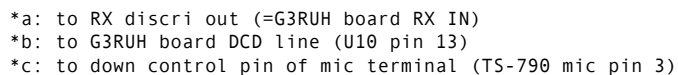
The second method was as you remembered with a little circuit. It was a  
circuit originally designed by JA6FTL I believe. Basically, the circuit  
looks at the discriminator voltage at the rig and the DCD line of the modem.  
The circuit "latches" on to the signal and causes button clicks on the  
microphone freq. down line. Howard-WB5EKW sent me a nice schematic of the  
circuit he used and I basically duplicated it. I used locally available  
parts including 1-LM324, 1-4001, and a couple 2N2222's. At the time I was  
using a PK232 and tucked the board inside of it. The problem is that the  
circuit is a "one-shot" solution. You have to reset the VFO either by  
serial port or manually.

Here is a copy of the original article for the circuit:

Auto U0-14 RX frequency tracking for TS-790/FT-736

[Block diagram]

[Circuit connection table.]



The discriminator IC output level is  $5.8V \pm 2V$ .

Whitout RX signal, set the VR to the point Q1 pin 1 level turn

HIGH->LOW and verify the DWN pulse originate at max S in real tracking.

For your reference, the NOR gate logic is as follow (7402)

| gate1 | gate2 | out |
|-------|-------|-----|
| 1     | 1     | 0   |
| 1     | 0     | 0   |
| 0     | 1     | 0   |
| 0     | 0     | 1   |

```

3 Q2 1-----|>-----> DWN signal to mic terminal
2 | Diode (1S1588 etc)

```

73s      sueo asato      JA6FTL      Dec.21 1990

Kohjin JR1EDE reported good result with TS-790. (Dec.28 1990)

The additional information from Rick KF4WQ (Dec.29 1990)

In case of using 74LS02(not CMOS but TTL) for Q2,it needed additional one register (330 ohm) from Q2 pin6 to GND.

Note: a 4001 can be substituted for the 74HC02N (pin outs are different!)-  
Mark, KC4EBR 12/93

At 08:02 PM 8/11/95 -0500, you wrote:

>Hi everybody,

 $\gamma$ 

```
>Well there I am, a wonderfull DSP-94 (number 103 of the second series) in
>my hands and having quite some fun with it.
```

```
>The Box performs great and I can only say PFWEWW what a box! It's big
>fun testing all the different modes. No heatstroke, all functions green!
```

 $\succ$ 

>BUT...

>

```

>Well you have to want the impossible I think..
>
>When I started using the unit on the 9600 baud birds it soon became
>apparent that it is not the DSP-93 that does the doppler correction but
>that someone else has to provide this. My hand has proven to be a good
>tool, coordinated by input from my eye that stays glued on the deviation
>meter needle and on the dcd/data leds of the TNC/DSP-93 combination, all
>this controlled, filtered and handled by a leftover piece of brain.
>
>Now it so happens that I can not leave these pieces of myself at home
>whilst going to work so here comes the big question:
>How to do doppler tracking on a FT736 without undue operator intervention.
>
>In a dim corner of my mind i seem to remember people talking about
>op-amps connected to the discriminator output an coupeled to a piece of
>tnc logic and going back to the mic up/down switches but....
>
>So what are the options?
>Can the DSP-93 concievably handle this (it connects to the discriminator,
>it generates the DCD and it connects to the mic up/down lines.) We would
>have to couple the signal DC of course and add some logic. Any Ideas??
>
>As we have information on the signal quality.. we can maybe think about
>adaptive tracking (the doppler reversal phenomenon at the horizon edge
>par example...)
>
>Let's see who can help me here... I'm willing to butcher and invent where
>necessary, but need some ground ideas first.
>
>Happy DSP'ing
>Arne F/pa0kkv Luehrs
>
>

```

Mark L. Hammond [KC4EBR]

## 102. What about code for other C processors

```

From: Bob Smith <rsmith@internetmci.com>
Date: Fri, 11 Aug 1995 20:00:46 -0400
To: "'List DSP-93'" <dsp-93@tapr.org>
Message-ID: <01BA6895.87626BA0@usr7-dialup30.Atlanta.mci.net>
Rendered body type: text/plain

```

Just picked up the QRZ CD and was browsing through the files on it. Behold a DSP library. And there's more: a 320C26 library as well!

The obvious question is: Can I use any of this code on the 320C25 in the '93. It looks like the 26 is about 2x faster as the below table from TI's Web page shows.

Also, I am quite intrigued at the prospect of upgrading the processor as the clip from their web page [[www.ti.com/sc/docs/dsps/dspsprod.htm](http://www.ti.com/sc/docs/dsps/dspsprod.htm)] suggests:

>>>Not only can first-generation designs migrate to second-generation devices, when more MIPS are required, an upgrade to the 20-50 MIPS capability of the fifth-generation TMS320C5x series is a simple matter.

<<Let me know if anyone does not have WWW capability and I will be happy to e-mail any and all of these pages - they really help in understanding these devices - the main reason for my involvement!>>>

| Device Name | Cycle                 |              |              | MEMORY(words)  |      |         |          |     |     |
|-------------|-----------------------|--------------|--------------|----------------|------|---------|----------|-----|-----|
|             | Freq<br>I/O~<br>(Mhz) | Time<br>(ns) | Chip<br>MIPS | On-Chip        |      |         | Off-Chip |     |     |
|             |                       |              |              | Package<br>RAM | ROM  | Dat/Pro | Ser      | Par |     |
|             |                       |              |              |                |      |         |          |     | DMA |
| -----       |                       |              |              |                |      |         |          |     |     |
| C25%        | 40                    | 100          | 10           | 544            | 4K   | 64K/64K | 1        |     |     |
| 16Kx16      | Ext                   | 1            | 68 PLCC/68   | PGA/80         | PQFP |         |          |     |     |
| C25-33%     | 33                    | 120          | 8.333        | 544            | 4K   | 64K/64K | 1        |     |     |
| 16Kx16      | Ext                   | 1            | 68 PLCC      |                |      |         |          |     |     |

|         |     |     |                 |      |          |         |   |
|---------|-----|-----|-----------------|------|----------|---------|---|
| C25-50% | 50  | 80  | 12.5            | 544  | 4K       | 64K/64K | 1 |
| 16Kx16  | Ext | 1   | 68 PLCC         |      |          |         |   |
| P25%    | 40  | 100 | 10              | 544  | 4K EPROM | 64K/64K | 1 |
| 16Kx16  | Ext | 1   | 68 PLCC/80 PQFP |      |          |         |   |
| C26     | 40  | 100 |                 | 1.5K | 256#     | 64K/64K | 1 |
| 16Kx16  | Ext | 1   | 68 PLCC         |      |          |         |   |
| C26B    | 40  | 100 | 10              | 1.5K | 256#     | 64K/64K | 1 |
| 16Kx16  | Ext | 1   | 68 PLCC         |      |          |         |   |

### 103. Re: [DSP-93:1327] What about code for other C processors

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 12 Aug 1995 14:28:56 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac52b090f3e9@[204.96.0.80]>  
Rendered body type: text/plain

Bob Smith,

>The obvious question is: Can I use any of this code on the 320C25 in the  
>'93. It looks like the 26 is about 2x faster as the below table from TI's  
>Web page shows.

As I read the Web page (subject to revision in my understanding), the  
difference between the '25 and '26 is in the internal memory configuration.  
I don't see the difference in speed (except that gained by running out of  
internal memory).

Ron W5RKN

also:  
rparsons@bga.com

### 104. [DSP-93:1317] Re: AUDIO M

From: bandy@server.elysian.net (John Bandy)  
Date: Sat, 12 Aug 95 17:09 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0sh0k7-0003cDC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: [DSP-93:1317] Re: AUDIO M

Hello Ron,  
For the benefit of the other readers. The 'heatstroke' problem I been  
having was caused by me using an 800ma wall transformer instead of the  
1500ma they had sent with the unit. I had not look at the dsp-93 since  
last March and pickup the wrong one. I'm still not getting any sound  
out of this thing even after reheating the solder joints on u207, u208,  
u209 & u210.  
73's  
John W0UT

B>Hello Ron,  
>For the benefit of the other readers. I'm convinced now after further  
>testing the lifting and reseating had nothing to do with the failure.  
>It had a 'heatstroke' about the time I was lifting and reseating. After  
>allowing it to cool for 24 hours it passed tests #1 thru 4 ok. It  
>passed test 5 & 6 ok except it did not produce any audio sounds which  
>is consistent with these tests in the past. It did not pass test #7 but  
>it did pass it last March so I suspected heatstroke and confirmed it  
>when it fail test #4 upon running it again. No scope was used.

B>73's John W0UT

B>W>John W0UT

B>W>Glad you got mailing list capability.

B>W>Did you run the TESTxxxx programs just before lifting and reseating u208,  
> >u207, & u209?

B>W>Which of the TESTxxxx programs work properly now? Which fail? How?

B>W>What do you mean by "no audio problem"? Under what conditions?

B>W>Ron

B>W>>To: DSP-93@TAPR.ORG  
 > >>Subject: AUDIO MISSING  
 > >>  
 > >>Hello Ron Parsons,  
 > >>I finally got on the dsp-93 listserv as you suggested and have been  
 > >>reading the mail for some time. The no audio problem caught my eye  
 > >>since I had the same problem months ago and was unable to resolve it.  
 > >>Cover was always off by the way and I never had any audio. So I dug out  
 > >>the DSP-93 and fired it up and tried the ice cube with no luck. So I  
 > >>then lifted and reseated u208, u207, & u209 and now the leds don't  
 > >>correctly sequence on the various tests like they use to. Still getting  
 > >>the monitor prompt "\*" (TEST 1). Push RESET button and the yellow led  
 > >>blinks. Entering a "g" will cause the red and yellow leds to blink but  
 > >>red will not stay on and yellow will not stay off (TEST 2) like they use  
 > >>to.  
 > >>Any help would be appreciated.  
 > >>Will be in Dallas for the ARRL Digital Communications Conference 9-8.  
 > >>73's  
 > >>John W0UT  
 > >>---  
 > >>=9C OLX 1.53 =9C My E-Mail Address is: john.bandy@twsubbs.twsu.edu  
 > >>

B>W>Ron W5RKN

B>W>also:  
 > >rp Parsons@bga.com  
 > >---  
 > >~ OLX 1.53 ~ My E-Mail Address is: john.bandy@twsubbs.twsu.edu  
 ---  
 ~ OLX 1.53 ~ To get 8 hours of happiness per day, hobby for a living!

## 105. Re: AUDIO M

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
 Date: Sat, 12 Aug 1995 22:42:48 +0000  
 To: dsp-93@tapr.org  
 Message-ID: <199508122302.TAA02012@camel.campbell.edu>  
 Rendered body type: text/plain

I hope the other "heatstroke victims" will check out their supply voltages, too. Maybe John is on to something here.....

John, do you have an extra LM386 (audio amp) chip? Radio Shack even sells them....maybe it is no good? Maybe check the speaker connections/wires? Silly little things, but always worth a look.

At 05:25 PM 8/12/95 -0500, you wrote:

>To: dsp-93@tapr.org  
 >Subject: [DSP-93:1317] Re: AUDIO M  
 >  
 >Hello Ron,  
 >For the benefit of the other readers. The 'heatstroke' problem I been  
 >having was caused by me using an 800ma wall transformer instead of the  
 >1500ma they had sent with the unit. I had not look at the dsp-93 since  
 >last March and pickup the wrong one. I'm still not getting any sound  
 >out of this thing even after reheating the solder joints on u207, u208,  
 >u209 & u210.  
 >73's  
 >John W0UT  
 >  
 >

Mark L. Hammond [KC4EBR]

## 106. Re: [DSP-93:1328] Re: What about code for other C processors

From: tomob@ix.netcom.com (Thomas E. O'Boyle )  
 Date: Sat, 12 Aug 1995 19:47:04 -0700  
 To: dsp-93@tapr.org  
 Message-ID: <199508130247.TAA12494@ix7.ix.netcom.com>  
 Rendered body type: text/plain

You wrote:

>  
 >Bob Smith,  
 >  
 >>The obvious question is: Can I use any of this code on the 320C25 in  
 the '93. It looks like the 26 is about 2x faster as the below table  
 from TI's Web page shows.

>  
>As I read the Web page (subject to revision in my understanding), the  
>difference between the '25 and '26 is in the internal memory  
configuration.  
>I don't see the difference in speed (except that gained by running out  
of  
>internal memory).  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com

We are using the C26 in a commercial project and the difference is the  
internal memory and boot loading capabilities.

Tom

---

## 107. RE:WB5AOH

From: Bob Morgan <morganb@tenet.edu>  
Date: Sat, 12 Aug 1995 23:07:24 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508130407.XAA03008@beall.tenet.edu>  
Rendered body type: text/plain

AS RECEIVED INTO EDITOR HERE AT WB5AOH--

Hi Bob,

Just a quick comment. The TPRS\*.\* are the 9600 bps Texnet modems.  
Since they are not NRZI they are polarity sensitive. The ones published  
are +/- (1 shifts frequency up). Let me know what polarity you need for  
the 726's and I'll set you up.

Are you coming to the DCC meeting in Arlington?

73 Frank WB5IPM

REPLY--

Mostly to Frank, but some general info also here. After many delays  
I finally got the DSP hooked up to any kind of a radio and ran something.  
Most of the project related delays were radio mods and cabling troubles.  
Other delays were having other projects get in the way of this one.

Somewhere along the way I will publish the FT-726 interface I came up  
with when I check out all of it. It is close to what was already published  
as to the FSK injection and pickoff points, and a relay driven by the  
Normal/Satellite switch logic to switch injection between the two TX  
modulators, and a toggle switch to switch injection and pickoff between FSK  
and AFSK circuitry, and a DB-9F on the rear panel for everything, similar  
pinout to that used on the TNC-1, and still used on TexNet modems.  
I added a swamping resistor between the existing modulator output and the  
FSK injection points so that the DSP wouldn't have to drive against  
the low output impedance of the existing modulator stage. This was done  
to both the regular and satellite TX strips.

I cabled up to the FT-726, and all it has been convenient to run so  
far is plain old AFSK 1200b packet on 2m. I loaded PKT and the first thing it  
did was to grab the freq up/down leads simultaneously and head up the  
band with it. The FT-726 behaves as the -736 is advertised to do: PTT is  
active low, and UP/DOWN are active hi +5v. After going to much work to  
cable up to all the interface leads inside the radio, I wasn't much in the  
mood to undo some of them. The option jumpers are set to make this  
radio behave when the DSP is switched on, but it was only when the PKT  
program gained control that it ran away. Also I don't intend to make up a  
separate cable (I put a toggle switch in the radio to switch between  
modulators and detectors) for each program I load, so I patched the program  
instead. It is appended. I was fresh out of connectors anyhow by that time.  
And thats a S/W function anyway. Had no trouble doing this, the assembler came  
up and did its thing first time. Only thing I had to try a few times was  
to get the logic inverted here and there as necessary. I think it took  
three tries to get it right. So thats my first programming experience with  
the DSP chip, and it wasn't bad at all. All the patch does is to read the  
option straps and init the radio control buffer register accordingly. It  
should be a general solution for any kind of radio if it is assumed that the  
option jumpers are set correctly to begin with. Patch probably took 1.5 hours

from concept to successful test.

TNC used on this project is the original TAPR TNC2, #75, ordered on the day we all inundated the Tucson toll office way back then. I have other TNC's but thought I might as well use the real one. It has been repaired for lightning damage a few times, so I expect surprises from time to time.

After a few more episodes of tinkering with the TNC2 interace cable I managed to make a couple of local connects this evening, so I am pleased with that. Biggest problem so far has been getting spare time to play with it, and seems like cabling is taking up quite a bit of that. I bought this kit primarily as an educational experience to get hands on knowledge of DSP. It also looked like the only effective method of dealing with the multitude of modulation formats that pop up in packet, counting all of the terrestrial and satellite applications. I had always been leery of putting any money into the various satellite format modems, considering that I do little satellite operating. I think that could now change too.

As for the connects themselves, I had some retries on transmit, which I haven't had time to chase down. I suspect it may be related to AX.25 parameters, it seems a little quick on the trigger to respond. Didn't run any error tests but it seemed to receive OK. TX audio sounded a little unlike any I have heard before, and can't really pin that down yet, and hadn't looked at on a scope yet.

As for TexNet FSK modem program, when I get a service analyzer back, which I borrow from Harry N0CCW in San Antonio from time to time, I will establish the freq / polarity of that radio and let you know. The biggest problem in that department: I bought that radio many years ago, and optioned it out for vhf/uhf/satellite, but hesitated to get the 440-450 module at the time, and then they disappeared, so that probably won't be the rig I use for 445.1. So much for longrange planning. I think that AX.25 was just being drawn up when I made that purchase. I haven't seen too much discussion of the -726 here, and I suspect it may have gone obsolete on me.

Frank - I will be at the DCC conference, and Greg and I did a couple of papers on TexNet that I may get in on. Joe WA5VMS plans to be there too, and some of our friends from Arkansas.

file for PKT.asm -----

```

 DINT ; disable interrupts
 LALK 0030h ; mask SIO RX and TX interrupts active
 SACL IMR ; store mask in IMR

DSP_INI ZAC ; zero A
;
;NEED TO READ THE PTT/U/D/SENSE STRAPPING, AND INIT ACCORDINGLY - RBM WB5AOH
; PATCH AUG 8 1995
 SACL RO ; zero radio out buffer - temporarily
 IN DI,TNC_INPUT ; get TNC input port
 LAC DI ; load data
; STRAPPING: TNC-14 P1 U/D SENSE .EQU RCLK0 ; TNC-18 P1 PTT SENSE .EQU RDO
; STRAPPING: TNC-7 P2 U/D SENSE .EQU CONNO ; TNC-16 P2 PTT SENSE .EQU XCLK0
;
 LAC DI ; load data
 ANDK RCLK0 ; isolate TNC-14 bit (P4 U/D)
 BNZ DSP_INI2 ; INIT TO INACTIVATED STATE
 LAC RO
 ORK FREQ_UP_R1
 ORK FREQ_DN_R1
 SACL RO ; PRESET radio out buffer
DSP_INI2
 LAC DI ; load data
 ANDK RDO
 BNZ DSP_INI3
 LAC RO
 ORK PTT_R1
 SACL RO ; PRESET radio out buffer
DSP_INI3
 LAC DI ; load data
 ANDK CONNO
 BNZ DSP_INI4
 LAC RO
 ORK FREQ_UP_R2
 ORK FREQ_DN_R2
 SACL RO ; PRESET radio out buffer
DSP_INI4
 LAC DI ; load data
```



```

 ANDK XCLK0
 BNZ DSP_INI5
 LAC R0
 ORK PTT_R2
 SACL R0 ; PRESET radio out buffer
DSP_INI5
;
 ZAC ; RELOAD ZERO
;
; END PATCH RBM WB5A0H 8/8/95
;
 SACL D0 ; zero data out buffer
 SACL S0 ; zero sig buffer
 SACL DL0 ; zero delay buffer 0

```

The above patch has been tested only on radio port 1, and only with the FT-726. It should in general work for all combinations which can be strapped on the options jumpers, on both ports, but I haven't tested this premise. I would think that code of this sort ought to exist on all dsp programs which will be used with radio control connections.

73 de Bob

Robert B. Morgan                8-12-95  
WB5A0H  
Austin, Texas  
morganb@tenet.edu

## 108. RE: [DSP-93:1328] Re: What about code for other C processors

From: Bob Smith <rsmith@internetmci.com>  
Date: Sun, 13 Aug 1995 07:25:28 -0400  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BA694F.00904E20@usr7-dialup30.Atlanta.mci.net>  
Rendered body type: text/plain

What I think I meant was the C26 could hold 2x the data and the C50 ran 2x faster at least. I understand about the 26. What about the C50? is that drop in compatible or with some circuit mods?

I notice that some of the faster modems hit the chip capabilities ceiling pretty fast.

>The obvious question is: Can I use any of this code on the 320C25 in the >'93. It looks like the 26 is about 2x faster as the below table from TI's >Web page shows.

As I read the Web page (subject to revision in my understanding), the difference between the '25 and '26 is in the internal memory configuration. I don't see the difference in speed (except that gained by running out of internal memory).

```

begin 600 WINMAIL.DAT
M>)\^(C8+`0:0" `S`~~~~~!`$`~0>0!@`(``Y 0`~~~~~#H`$`-@ 0`
M`@`~~~~(``@!!) &`~@!`~~~~#`~~~~,`#`#`~~~~"P`/#@`~~~~"?\/
M`0`~~~~#T`~~~~~@2L?I+ZC$!F=;@#=`0]4`@`~~~~!D<W M.3- =&%P<BYO
M<F<`4TU44 !D<W M.3- =&%P<BYO<F<`~~~~@`", $`~~~~%`~4TU44 `
M`~~~~,P`0`~~~~!`~~~~!D<W M.3- =&%P<BYO<F<`P`5# $`~~~~#/X/!@`
M!X`~3 !`~~~~$@`~~~~=D<W M.3- =&%P<BYO<F<G`~~~~@$+, $`~5`~
M4TU44#I$4U M.3- 5$%04BY/4D<`~~~~P`~0`~~~~+$`Z`0`~~~~(!]@!
M`~~~~!`~~~~,1*0$(@ <`&`~$E032Y-:6-R;W-09G0@36I;"Y.;WIE
M`#$(`02`0`~`~4D4Z(%M$4U M.3.Z.3.R.%T@4F4Z(=H870@86)0=70@
M8VJD92!F;W(@;W1H97(@0R!P<F]C97-S;W)S`&L3`06`P`.~~~~RP<(`T`
M!P`9`!P`~~~~C`0$@@`~#@`~`~L"~`~<`$P`R`~`~P$!"8`!`"$`~`~Q
M,D$P,48U0D)!1#-#13$Q0CA#-S0T-#4U,S4T,# P, #\!@$#D 8`E 0`~!(`
M`~+`~`~,)@`~~~~~P`I`~~~~~#`#8`~`~$`~0`~@`E)^(VfZ
M`1X<`~!`~~~~/0`~~~~)%.B!;1%-0+3DS.C$S,CA=(%)E.B!7:&%T(&%B;W5T
M(&-09&4@9F]R[&]T:&5R($,<`)08V5S<V]R<P`~~~~~7$`~0`~~~~!8`~!
MNFEO?DI;`Z 3T[H15KC'1$535`~~~~>`!X,`0`~~~~4`~!33510`~!X`
M`PP!`~`~%P`~`~)S;6ET:$!I;G1E<FYE=&UC:2YC;VT`~`~!A"[AP>(`P`
M$!@"`~`~>`~@0`0`~`~4`~!72$%4251(24Y+24U04Y45T%35$A%0S(V0T]5
M3$1(3TQ$,EA42$5$051!04Y5A%054P4D%,EA&05-415)!5$Q%05-4255.
M1$524U1!3D1!0D]55%1(13(V5TA!5$%"3U54`~!1`!`~!`~(`~.P"
M`~#2!`~3I&=: [1+T#`~`H!#P(5`J@%ZP*#`~`~"\@D"&-H"L!S970R-P8`
M!L,"@S(#Q0(`<`)<1'B<W1E;0*#,<`Y <3`H,T`T43-0=M`H,V-1+,%@V
M!$83,$$@@$QU8VED82 (4.L`@`~P90*#-Q$&=,/W2Y]"H (SPG9.QW0,3*.
M.!`#(">`/V0R-1>0#R#K'1$-H@M@;F<Q, XS%% +`ADA<S$X((97$8 %0$D@
M=&@+@)YK)7$`@`!P!4!W800@126@91J ,C8@!!U,&QD(&@&\"> ,GAW)K,:

```

```
M8 &0(!P)X FPS78,"!R`Y$G\68FD!/03P7)5$:X"GQ+B E<77 *, $D!/
M*+(!H A@!4 FPM\G$"K1)3,KV"DQ/RK@! #K)9$E460#8' N`.@!:#R;0JP
M=&D"8";@!;$#!TEH" :P >)S!I<F-S+ $$87, "H4*A26 ;CIO+V!C)N N
M0S!#;V;W)K,IY01B;00@); L%!%PZP4@)S!A"K!B`Q P``>1-S*0-=$CD" 3
M4!' ='G]*=,N,5P*APMD%$+$A-0)S)@!9 %0#Y4)M%08NQV:0A@!"!Q"E 3
MP#K ^P.@! `Z&H #D2L!$; HH?\W$#-C+A$%H VP+[ #H";"JC,!T"<`-2[2
M)L*$CSD0,3HP)SDS*M(J86]0]FL$(#7@:S*B+%(N`B04\RFY)J1B91V !^!
MD2^1(P-2%D!))W,^U3Y7I&5B-K!A9R;@<R>@='S-WU!!" E@!WP88,HU$8W
M*'-U8FHZ`GQT;TA!.K `D#MR`Z!MYS<0*R@V@2DL/IE+L W0SP20"? RD41@
M=<^>X2:S_B<^02BR3C!"HSYT+MJ6YN!T F$01@<C<0!::!N^&9I9PAP+U$"
M(=#V)8#Z9 (@)S+Q"> H%$S8+N&,<W)X"> *&5X,I!;!3$N0V<+<5/Q8C<0
M<G\K(,`-I$K\C-@/M5/G2E>+B1,..;<^U1T1`%H0`P`0$ `````#`!$0`0``
M`$ ``S"@D["T;FFZ`4 ``#"@D["T;FFZ`1X`/0`!````!0````%`.B `````
``$T`
`
end
```

---

## 109. Re: [DSP-93:1332] RE:WB5AOH

From: fperkins@onramp.net  
Date: Sun, 13 Aug 1995 07:50:30 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508131250.HAA06001@mailhost.onramp.net>  
Rendered body type: text/plain

CQ Bob Morgan,

Pleased to hear of your considerable progress on interfacing the DSP-93 to your 726. Thanks for the code patch. It has been a long time since I worked on the PKT program; I thought it left the state of the UP/DWN lines alone when it took over ...

Anyway, I look forward to visiting with you in a few weeks at the DCC.

73 Frank WB5IPM

---

## 110. Re: [DSP-93:1333] Re: What about code for other C processors

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 13 Aug 1995 10:18:51 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac53c796dbf8@[204.181.160.72]>  
Rendered body type: text/plain

Bob Smith,

>What I think I meant was the C26 could hold 2x the data and the C50 ran 2x  
>faster at least. I understand about the 26. What about the C50? is that  
>drop in compatible or with some circuit mods?

I don't think there is a way to do that without massive mods to the DSP-93 design.

>I notice that some of the faster modems hit the chip capabilities ceiling  
>pretty fast.

That's right. There's a chance for you to design the DSP-96.

>

>Attachment converted: aOppie:WINMAIL.DAT 1 (????/----) (0000BEF0)

Whatever mailer you use attaches a MIME attachment. This one was 1712 bytes after conversion. You are going to fill up my hard disk :-)

Ron W5RKN

also:  
rparsons@bga.com

---

## 111. Initialization of UP/DN/PTT lines

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 13 Aug 1995 10:54:13 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac53cdeb64c96@[204.181.160.4]>  
Rendered body type: text/plain

>CQ Bob Morgan,

>

>Pleased to hear of your considerable progress on interfacing the DSP-93

>to your 726. Thanks for the code patch. It has been a long time since  
>I worked on the PKT program; I thought it left the state of the UP/DWN  
>lines alone when it took over ...  
>  
>Anyway, I look forward to visiting with you in a few weeks at the DCC.  
>  
>73 Frank WB5IPM

Bob and Frank,

Bob appears to be right. I'm surprised this hasn't been reported before.  
For example, PKT doesn't even initialize R0, FSK initializes it to zero,  
but thereafter the initial value of R0 is changed only on the PTT (and LED)  
bits.

There ought to be a Monitor function (or global, ugh!) to hold the value of  
the UP/DN/PTT initialization lines so each "modem" will not have to contain  
the code, just call the Monitor to initialize R0.

Bob Stricklin, put this on your TO DO list

Ron W5RKN

also:  
rparsons@bga.com

---

## 112. PK900 Hookup

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 13 Aug 1995 10:54:17 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac53cf149edc@[204.181.160.4]>  
Rendered body type: text/plain

Bob Smith,

These discussions ought to take place on the dsp-93 list so all can benefit.

The cap on the input is currently a tantalum electrolytic. I'd recommend  
using a smaller tantalum cap.

If you are measuring .85 VAC (I assume that is RMS), then that is about 2.4  
V p-p. That's probably way too high for the FSK modems.

Ron

>>>>First, what was in the attachment WINMAIL.DAT you included?  
>Have no idea - I do not see it.  
>  
>>>>Second, what radio are you using?  
>  
>Using the Icom 281H  
>  
>>>>We have noticed a problem with the Icom rigs (and probably others that  
>use the same FM detector chip). When the transceiver goes between transmit  
>and receive, there is a DC level shift of about 0.5 volts on the signal out  
>of the detector. Depending on the time constant of the circuit (including  
>the capacitor on the input to the DSP-93) this level shift may block the  
>first few bits of the packet from the station you are trying to connect to.  
>Try decreasing the capacitance (put a 1-2 mfd cap in series with the  
>receive audio) and see if this helps.  
>  
>Going to try this as soon as I can get to the rat shack. Should that be an  
>electrolytic? They do not seem to make ceramics that large.  
>  
>>>>Third, what is the signal level of the audio at TP1 on the DSP-93. At  
>9600 bps, you want no more than 1 V p-p.  
>  
>I am measuring about .850-.885 with a DVM set to 2V AC. Don't have a scope  
>(looking for one if you have any suggestions, that would be most  
>appreciated as value your advice).  
>  
>UPDATE: Been connecting up to the packet cluster pretty reliably now. The  
>unit seems to stay up pretty much all of the time. Have a PK96 coming in  
>the mail - I am anxious to do some comparisons.  
>  
>Thanks Ron and vry 73's.

Ron W5RKN

also:  
rparsons@bga.com

---

### 113. Re: [DSP-93:1267] Nut for Vol Control

From: fjgarci@ibm.net  
Date: Sun, 13 Aug 95 18:05:37  
To: dsp-93@tapr.org  
Message-ID: <9508140111.AA0024@localhost>  
Rendered body type: text/plain

Hi !

Very expansive way for JUST a nut, I think <grin>, Please don't bother in my case. Can you imagine a nut travelling to Spain in first Class??

EA1CWB@EA1CWB.EAAV.ESP.EURO  
fjgarci@ibm.net

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### 114. Re: [DSP-93:1338] Re: Nut for Vol Control

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 13 Aug 1995 12:41:10 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508131741.MAA32288@beall.tenet.edu>  
Rendered body type: text/plain

We got the set of nuts for the Volume pot in -- who needs a nut for there pot and I'll have Dorothy send you one.

Cheers - Greg

According to fjgarci@ibm.net:

>  
>  
> Hi !  
>  
> Very expansive way for JUST a nut, I think <grin>, Please don't bother  
> in my case. Can you imagine a nut travelling to Spain in first Class??  
>  
>  
> EA1CWB@EA1CWB.EAAV.ESP.EURO  
> fjgarci@ibm.net  
>  
>

---

### 115. RE: u/d/ptt init - fsk93U2

From: Bob Morgan <morganb@tenet.edu>  
Date: Sun, 13 Aug 1995 14:45:14 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508131945.OAA02612@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

Mostly directed at Frank again-

I just got off the phone with Joe WA5VMS back up in Oklahoma. He just brought up his DSP93 and the first experience he had with it was with FSK93U2. He reported that he was running active-hi PTT on whatever he was interfaced to at the time, and that program keyed the TX when the program gained control, sort of like my observation with PKT and the U/D leads. I told him that I had just sen this morning that FSK and maybe other programs had the same or similar problems. He asked me for a patch but I had to tell him that there wasn't any source for that one I could patch. I could get into a discussion (argument) about this that might go on for hours or days, but suffice to say that I come down on the side of users that know how ought to be able to fix and patch the stuff they get stuck with. That comes from 18 years of headaches as an engineer in a powerplant working with systems that cost 2000 times as much and no support. So much for the soapbox. Anyhow, looks like he can't go too much farther with what he is doing unless he gets a patch or he adds a logic inverter.

His other observations were that 1) The regulators were running way too hot for his comfort, and that the unregulated +13 was probably excessive. I have told him briefly of some of the thermal difficulties I have heard of here and he is of the initial opinion that the amount of heat being dissipated in the regulators is a problem. Seems like the TNC2 design put an extra dropping resistor ahead of the regulator?

Did I see Greg or someone mention that the 3 holes on the bottom of the case were for regulator mounting? Also I see a problem with the two regulators being directly above one another. That one on top has to work with hot air.

Joe said that even the -5v regulator was getting warm. I didn't realise it had any appreciable load on it.

2) His other observation was that the PTT output didn't have enough drive capability for something he wanted to do, and that a VN10 (?) or some other device might be needed. I think he indicated he put some driver transistor inside the hood of an external radio connector, This could also be the need he may have had for an active hi PTT, although I am not certain of that story.

I haven't seen any thermal problems with my DSP93, although that case sure runs warm. I have had it on continuously since the initial AFSK tests I ran previously, and it is still copying packet, and hasn't crashed or anything. That's good news.

73 de Bob

Robert B. Morgan  
WB5A0H  
Austin, Tx  
morganb@tenet.edu

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## 116. Re: [DSP-93:1336] Initialization of UP/DN/PTT lines

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 13 Aug 1995 15:27:45 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac540efea31b@[204.181.160.4]>  
Rendered body type: text/plain

Bob and Frank,

Another comment on Bob Morgan's "discovery." Frank, you could use the strapping info that Bob's code snippet decodes to eliminate having to have Yaesu and non-Yaesu version of certain modems. Just determine the proper sense of the UP/DN lines using the initialization strapping.

I guess this whole thing slipped by us as there were no Yaesu fans in the beta group. The initialization of R0 to zero fit the Icom/Kenwood bias just too well.

Ron W5RKN

also:  
rparsons@bga.com

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## 117. Re: [DSP-93:1340] RE: u/d/ptt init - fsk93U2

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 13 Aug 1995 15:44:42 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac5412dd8bfb@[204.251.33.26]>  
Rendered body type: text/plain

Bob Morgan,

Is Joe WA5VMS on this list? If not, encourage him to join us.

>I just got off the phone with Joe WA5VMS back up in Oklahoma. He just  
>brought up his DSP93 and the first experience he had with it was  
>with FSK93U2. He reported that he was running active-hi PTT on whatever he  
>was interfaced to at the time, and that program keyed the TX when the  
>program gained control

He is the first case of active high PTT I have heard of. As I was getting this mail from you, I was sending my thoughts on adaptive UP/DN. It now appears that we need to add adaptive PTT to that list also.

I'll start looking at the code to see what the best way to go on that is. Others please feel free to join the fun. This is a real good project to get your feet wet in DSP-93 programming, as Bob "discovered." That's one of the main advantages of the DSP-93.

Ron W5RKN

also:  
rparsons@bga.com

---

## 118. New-PSK

From: dmedley@indirect.com (David Medley)  
Date: Sun, 13 Aug 1995 13:50:54 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508132050.NAA01751@bob.indirect.com>  
Rendered body type: text/plain

Frank/Howard

I have run into a snag while testing the new PSK modems for the 736 radio. I believe the same snag existed when I was using the relays. On the plus side the system works well when using Port A. By this I mean it tracks well and I can communicate with the satellite via PB/PG. In fact it works pretty well. When using it this way the FREQ DN function is the only one used. Next I noted that if you crank the gain up with just noise from the receiver the random noise triggers FREQ DN constantly but never FREQ UP. So I hooked up a logic probe and found that there was activity on pins 5 & 6 of U205 as there is on pins 4 and 17 of U206 but no activity on pins 3 (hi) and 4 (Lo) of U205 and pins 19 (Lo) and pin 2 (Hi) of U206. It gets worse from here on. I then tried Port B and found that none of the functions work and the 736 goes immediately into search mode. With the probe I found that pins 2 4 and 6 of U205 were all hi. So I replaced U205 and U206 with new units. This did not alter the situation. I then believed that the problem could be corrupted software so I downloaded a fresh copy from the ftp site but this did not help either. Before I get too depressed I would ask you Howard if you did your testing on port 2 as well as port 1 and if you ever observed the FREQ UP function working. For you Frank do you know anybody else who has tried these modems? Did you try the freq up on the bench with a probe and port 2? If it is not a software problem then I have a fairly obscure hardware problem related to the data buss because I have changed all the ICs that seem to be involved in the Smart Tune function. For now I am defeated and any help/suggestions would be appreciated.  
de Dave KI6QE

---

## 119. Re: [DSP-93:1342] RE: u/d/ptt init - fsk93U2

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 13 Aug 1995 16:25:19 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508132125.QAA29620@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

At one time the development team was discussing the possibility of adding in-line options when downloading the software.

Greg

According to Ronald G. Parsons:

>  
> Bob Morgan,  
>  
>  
> Is Joe WA5VMS on this list? If not, encourage him to join us.

I am pretty sure Joe does not have Internet access. Bob and Joe talk via TexNet.

> >I just got off the phone with Joe WA5VMS back up in Oklahoma. He just  
> >brought up his DSP93 and the first experience he had with it was  
> >with FSK93U2. He reported that he was running active-hi PTT on whatever he  
> >was interfaced to at the time, and that program keyed the TX when the  
> >program gained control  
>  
> He is the first case of active high PTT I have heard of. As I was getting  
> this mail from you, I was sending my thoughts on adaptive UP/DN. It now  
> appears that we need to add adaptive PTT to that list also.  
>  
> I'll start looking at the code to see what the best way to go on that is.  
> Others please feel free to join the fun. This is a real good project to get  
> your feet wet in DSP-93 programming, as Bob "discovered." That's one of the  
> main advantages of the DSP-93.  
>  
>  
>

> Ron W5RKN  
>  
> also:  
> rparsons@bga.com  
>  
>  
>

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## 120. Re: [DSP-93:1343] New-PSK

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 13 Aug 1995 16:53:23 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac54238174ab@[204.96.0.135]>  
Rendered body type: text/plain

Dave KI6QE

>I have run into a snag while testing the new PSK modems for the 736 radio.  
>I believe the same snag existed when I was using the relays.  
>On the plus side the system works well when using Port A. By this I mean it  
>tracks well and I can communicate with the satellite via PB/PG. In fact it  
>works pretty well. When using it this way the FREQ DN function is the only  
>one used. Next I noted that if you crank the gain up with just noise  
>from the receiver the random noise triggers FREQ DN constantly but never  
>FREQ UP.

As I recall from previous discussions, Frank always (and only) tunes down  
as that is what Doppler ALWAYS does.

Don't know how (or if) he handles the situation you describe.

As to port 2, does TESTPORT work correctly on port 2?

Ron W5RKN

also:  
rparsons@bga.com

---

## 121. Re: [DSP-93:1343] New-PSK

From: fperkins@onramp.net  
Date: Sun, 13 Aug 1995 17:20:48 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508132220.RAA03586@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Dave,

I didn't implement "tune up" in any of my satellite modems because satellite  
doppler shift always goes down :-). When I did the port 2 Yaesu versions I was  
flying blind here because I gave Lon his 736 back. However, I think Howard ran  
the port 2 versions with OK results. Please confirm the file name(s) and date(s)  
you are testing. I think I have your phone # around here somewhere but please  
send it to me again with the above info.

Be in touch soon.

73 Frank WB5IPM

---

## 122. 8.3 for the birds...

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Sun, 13 Aug 1995 22:56:45 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508132316.TAA08189@camel.campbell.edu>  
Rendered body type: text/plain

So, when are the rest of you going to Win95 so we can use modem names longer  
than 8.3?

I see Frank has gotten into the "Z's" and might be running out of names!

In reality, the >8.3 is good until you have to do a backup/restore....then  
you have a REAL mess on your hands.....~1, ~2, etc everywhere....

On a serious note Frank, I caught a few AO-16/L0-19 passes using  
PSK93R1K.obj with my Kenwood TS-790A (using the microphone connector).  
Flawless on all aspects! Will try PSK93R1L.obj shortly and let you know  
about it, too. Thanks for all the keystrokes!

### 123. Re: [DSP-93:1344] RE: u/d/ptt init - fsk93U2

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 13 Aug 1995 18:04:59 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac5433ed507e@[204.96.0.80]>  
Rendered body type: text/plain

>At one time the development team was discussing the possibility of adding  
>in-line options when downloading the software.  
>  
>Greg

Adaptive UP/DN/PTT is better than "in-line options" (if by that you mean adding a parameter to the "DOS" command) because any external solution requires a priori knowledge of the radio hooked up to the DSP-93 at that time. Adaptive UP/DN/PTT makes the decision at run-time without requiring knowledge of anything by the controlling computer.

Ron W5RKN

also:  
rparsons@bga.com

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### 124. anotherHotOne

From: Bob Morgan <morganb@tenet.edu>  
Date: Sun, 13 Aug 1995 18:18:54 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508132318.SAA19966@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

Well I spoke too soon. But that isn't unusual. At least I didn't drive 300 miles to a remote node. That happened a couple of weeks ago, and it quit on the return trip. Another story.

About an hour after I reported here that the DSP93 was running continuously for about a day, it crashed. So I treated it as a thermal problem, and took some data. Whether or not it IS thermal I do not know for sure. It was just hot at the time.

To start with, I had an A/C problem over the weekend, and the ambient in the apartment is elevated and a little uncomfortable. I suppose the condenser fan quit. Anyhow I thought it ought to be a good test, and it was. Maybe somewhere in this data is a useful tidbit, either by itself or in comparison to other units. The unit was still running PKT with my init patch previously reported on. I walked by to check it and found LED #5 and #6 lit up steady, and received audio no longer caused any flickering. The TNC2 was still fat dumb and happy. I initiated a connect request, and the TNC keyed up, but the modem and the radio didn't, and there was no LED activity on the modem. So I started taking measurements.

I happen to have a thermocouple module for the DVM, and a fine gage open bead K thermocouple for it. With the case still on, and all undisturbed, I took ambient and case surface temperatures. Ambient was 89 F. Case temperatures varied from 105 (all readings Deg F) on the right side of the top of the case, to 109 on the left rear top corner, not surprisingly near the regulators. I also took a calibration check on the T/C under my tongue and it showed 96.5. Probably a bit light but not too noteworthy. That instrument has a range of 200 F. as best as I can tell, and has some builtin linearization to read directly on a 200 mV scale.

Then I lifted the lid and started taking DC voltage measurements as quick as I could. Found 4.96 and -4.96 respectively on the regulated buses. Found 5.02 on Both of the balancing resistors that we all have been discussing. Unreg voltages on the regulator inputs were 8.91 v on the Digital board, and 9.57 v on the Analog board. Then with the lid still off I took some heatsink temperatures. The upper heatsink mounting nut was running 140 F and the lower sink nut was running 138 F. The -reg VR202 tab (has no sink, runs electrically live) measured 150 F. Its unregulated voltage input was -13.0 v. AC input at the input jack was 9.62 vac. (I don't think I have a true rms dvm). AC line was 119.6 vac.



Transformer came with the kit, is Jameco 9vac 1500 mA, model AC915F5.

I managed to hook the t/c around an edge of the upper heatsink and lowered the case lid and watched it. It started at 138, and rose moderately fast after I lowered the lid back on, leveling off at 166 F. Then I lifted the lid and quickly rechecked VR202, it was 167 F then.

I took a dab of tape and taped the t/c to 3 different IC's one at a time, and put the lid on each time to stabilize and read. First the 32044 A/D: started at 115, stabilized at 127 F. Next the 16550 uart: started at 117, stabilized at 123 F. Last the DSP processor: Had to use a tuning wand to reach under and stick the tape and t/c down, don't know how good a thermal contact I made (the first two I mashed down with a finger): started at 125, stabilized at 134 F.

The Program I was running was crashed, and probably no activity was taking place on the peripherals. The CPU I haven't a clue. Anyhow I wonder what the heat dissipation would have been on the 32044 if it was doing anything useful. I did hook up the scope and go looking around the 32044 to see what, if anything, it was doing. There was no activity except for the master clock, which had a good looking fullscale clock with some overshoot and ringing (pin 6). All this testing was with the cover off. The following pins were at +5 hi: 5, 4, 14, 10, 11, 3. note: Pin 12 (dx) was intermediate, and measured 3.24v with dvm. No activity. I wonder here, unless it is tristated, what is going on and if it is significant. The ref voltage at pin 8 was 3.09v and constant.

All the above were taken without interrupting power or pushing reset.

I pushed the reset button, connected to the serial port and reloaded the same program. It came up and worked packet as before, this time the lid is off, noise or not.

The voltage testing I did during construction, prior to IC plugin, is as follows, of course unloaded:

Board 1: reg 5.03v, unreg 13.5v.

Board 2: reg 5.02v, unreg 13.07v.  
reg -4.94v, unreg -13.51v.  
reg 5.00v (C227)

AC sec: 10.2vac, AC line: 117 vac.

Like I say, maybe there are useful tidbits of information in this data.

I am seriously thinking of relocating the main regulators to the case mounting screw holes (if thats what they are for) and putting a heatsink on the -5v regulator.

73 de Bob

Robert B. Morgan  
WB5A0H  
Austin Texas  
morganb@tenet.edu

---

## 125. Re: [DSP-93:1349] anotherHotOne

From: Greg Jones <gjones@tenet.edu>  
Date: Sun, 13 Aug 1995 19:01:43 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508140001.TAA13368@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to Bob Morgan:

>  
> I am seriously thinking of relocating the main regulators to the case  
> mounting screw holes (if thats what they are for) and putting a heatsink  
> on the -5v regulator.  
>

Just for note - the holes on the bottom of the case were put there for the possibility of an 'L' shaped heatsink that could be mounted to the to regualtros and down to the case. Never got around to having the L shaped bracket fabricated...but it shouldn't be to hard to find a peice of metal

and make it work as a test.

Cheers - Greg

---

## 126. WA5VMS

From: Bob Morgan <morganb@tenet.edu>  
Date: Sun, 13 Aug 1995 19:18:21 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508140018.TAA02274@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain

to expound on what greg said-  
Joe WA5VMS, in Muskogee, doesn't have internet access. I don't think there is any provider in Muskogee that doesn't require a toll charge from Tulsa or OKC. When TexNet works across the Red River, we communicate. TexNet is as close as that part of the world gets to an information highway, super or othersise. Thats the node I drove 300 miles to put on, and we still aren't where we want to be in the connectivity department. I didn't get on the internet myself until I moved from there to Austin, and still fumbling my way around on it.  
73 de Bob  
WB5A0H  
Austin Texas  
morganb@tenet.edu

---

## 127. Re: [DSP-93:1347] 8.3 for the birds...

From: fperkins@onramp.net  
Date: Sun, 13 Aug 1995 19:22:36 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508140022.TAA11038@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Mark,

Please recall that you started the new round of PSK work when you asked me to brighten the SmartTune light :-).

Are you coming to the DCC conference?

73 Frank WB5IPM

---

## 128. Re: [DSP-93:1346] Re: New-PSK

From: dmedley@indirect.com (David Medley)  
Date: Sun, 13 Aug 1995 17:32:56 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508140032.RAA04315@bob.indirect.com>  
Rendered body type: text/plain

Hi Frank and Ron. Well I wish I had realised that freq up was not implemented as it would have saved me a day or so of frustration!! I suppose it is written somewhere in the manual or other docs and I missed it. If it is not mentioned then perhaps it should be. As to port 2 last time I ran TESTPORT it was OK but that was some time ago. Will run it again tomorrow. Right now we are waiting for another storm and the hatches are being battened down.

These are the directory entries for the modems I have been testing:

|              |       |          |        |
|--------------|-------|----------|--------|
| PSK93X1A.obj | 5,064 | 07-29-95 | 11:59a |
| PSK93X2A.obj | 5,064 | 07-29-95 | 11:59a |
| PSK93X1B.obj | 5,060 | 07-29-95 | 11:59a |
| PSK93X2B.obj | 5,060 | 07-29-95 | 11:59a |

Will report again tomorrow after I have run TESTPORT.  
Dave KI6QE

---

## 129. Re: [DSP-93:1348] RE: u/d/ptt init - fsk93U2

From: fperkins@onramp.net  
Date: Sun, 13 Aug 1995 19:28:27 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508140028.TAA11329@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Ron,

I can't thank you enough for tackling the adaptive up/down/ptt issue.

PS, how are you going to handle the adaptive tuning pulse rate? Yaesu's like much faster tuning pulses than ICOMs and Kenwoods :-).

73 and grateful

Frank WB5IPM

---

### 130. Re: [DSP-93:1343] New-PSK

From: w6shp@amsat.org (Howard Sodja)  
Date: Sun, 13 Aug 1995 17:47:57 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508140047.RAA15967@hopf.dnai.com>  
Rendered body type: text/plain

Hello Dave,

Sorry to hear of your frustrations. I know what is like as I have had my share.

> ... Next I noted that if you crank the gain up with just noise  
>from the receiver the random noise triggers FREQ DN constantly but never  
>FREQ UP. So I hooked up a logic probe and found that there was activity on

For best copy you should not mess with the gain, but set up your FSK signal for 1 v p-p at R215 or R216, as I mentioned in my last message, and use your data jack for PSK. I found that getting a weak signal to copy with the gain up caused poor copy when the signal got strong and was excessively clipped. Noise giving false click will not be a problem if you use psk93x1a.obj as you must have a decoded signal for the mic to click. This is what I use with my beams. For weak signals (like the Italian Microsat, or with omni antennas) psk93x1b will work better, but at the price of clicking if your noise level is high. This is what I use with my Lindenblads. But even when I experimented with the FSK signal set to 1.2 volts I only had the mic click run away one time when the noise level was high, or when my neighbor ran his lawn mower or motorcycle. But throughput was poor as 1.2 v p-p FSK gave too much clipping on my PSK signal. With 1 v p-p FSK RD I never, except on one exceptionally noisy day, have had more than occasional false noise mic clicks.

>ftp site but this did not help either. Before I get too depressed I would  
>ask you Howard if you did your testing on port 2 as well as port 1 and if  
>you ever observed the FREQ UP function working. For you Frank do you know

You are right, they never click up, never down. But I do not see that as a problem as doppler never goes up.

I did test the software psk93x2a.obj and psk93x2b.obj on port 2 and they ran fine. I found I needed different settings for the HF programs for the TD and RD pots R213/216 than for the psk and fsk programs that are software adjusted for the 1 volt p-p FSK RD and TD level at R214/215 (I may have gotten my pot numbers crossed). So normally you will only be using one port for HF and one for the Microsats and vhf/uhf, so at least you are operational. As I do not see a need for mic clicks on hf, you can use port 2 for hf.

Yes, this does not speak to your port 2 problem, which I also would want to resolve. I am just trying to reduce your depression a little :-)

Did you check pin continuity on port 2's mini-din? A solder bridge would cause your problem, and that area is tight.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ K0-23 and A0-16  
w6shp@amsat.org

---

### 131. DCC conf-nope

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Mon, 14 Aug 1995 00:52:39 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508140112.VAA08504@camel.campbell.edu>  
Rendered body type: text/plain

Yes, and the DCC scary part is, that you DID it! It \*IS\* noticeable brighter...tnx.

No on the DCC conf. Being a biologist, I have trouble justifying travel time and funds for radio related stuff...I am having dreams about the Amsat meeting in Fla, but afraid that won't happen either.

At 07:40 PM 8/13/95 -0500, you wrote:

>Hi Mark,  
>  
>Please recall that you started the new round of PSK work when you  
>asked me to brighten the SmartTune light :-).  
>  
>Are you coming to the DCC conference?  
>  
>73 Frank WB5IPM  
>  
>

Mark L. Hammond [KC4EBR]

---

### 132. Re: [DSP-93:1353] Re: New-PSK

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 13 Aug 1995 19:58:26 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac545003e9bb@[204.96.0.67]>  
Rendered body type: text/plain

>Will report again tomorrow after I have run TESTPORT.  
>Dave KI6QE

Don't forget to use TESTPORY for the Yaesu.

Ron W5RKN

also:  
rparsons@bga.com

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### 133. (no subject)

From: Bob Smith <rsmith@internetmci.com>  
Date: Sun, 13 Aug 1995 17:11:06 -0400  
To: "'List DSP-93'" <dsp-93@tapr.org>  
Message-ID: <01BA69BA.AB6D23C0@usr11-dialup32.Atlanta.mci.net>  
Rendered body type: text/plain

>>>The cap on the input is currently a tantalum electrolytic. I'd recommend  
using a smaller tantalum cap.

OK tantalum it is - I'll get one tomorrow.

>>>If you are measuring .85 VAC (I assume that is RMS), then that is about 2.4 V p-p. That's probably  
way too high for the FSK modems.

Is there a way for me to measure p-p w/ a DVM?

Thanks Ron for the help. I'll write this all up for the build update!

---

### 134. Re: [DSP-93:1353] Re: New-PSK

From: fperkins@onramp.net  
Date: Sun, 13 Aug 1995 20:18:35 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508140118.UAA14318@mailhost.onramp.net>  
Rendered body type: text/plain

August 13, 1995 @ 20:15 CDST

CQ David,

I goofed. Here is psk93x2h.obj, which I think will fix the problem  
with runaway port 2 tuning in psk93x2a.obj ... Please give it a try.  
If this does the trick, I'll patch psk93x2b.obj, etc.

73 Frank WB5IPM

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Frank H. Perkins, Jr.

-----

```
:18200000FF801008FF801092FF801098FF801008CE01C808CE07CE030D
:18201800CE08D0010030607EEB7ED00180376002E702FE8012A3D001BB
:1820300000776002E702FE8012A3D00140376002E702FE8012A3C80015
:18204800CE37CE20D00100206004CA006061CE00CE1FD001000360615D
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:18207800CE1FD00100036061CE1FD00124486061CE1FCE01D001001046
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:1820C00060786079607A607BCA0A607CD0010090607DD0010190607F73
:1820D800C806CA0060206021602260236024602560266027602A602B27
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:18210800CA00602FE32F8530C8002072D00504006072E672CE0055001F
:18212000FF80108F20006060FE80109CCE00CE2620616001CE00CE2619
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:1821500010AD2072D004FDF6072206AD0020688006E606AD003400051
:18216800F28010B7606A296A686BD001131F006B586BCC20586C3C6F6A
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:18257000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF6B
:18258800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF53
:1825A000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3B
```

:1825B800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF23  
:1825D000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF0B  
:1825E800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3  
:18260000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFDA  
:18261800FFFFFFFFFFFFFFFFFFFFFFFF00010001000100010001B0  
:182630000001000100010001000100010001000000320064009600C897  
:1826480000F901290159018801B601E3020E02390262028A02B002D416  
:1826600002F7031803360353036E0387039E03B203C403D403E103ECFD  
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:18272000FD50FD76FD9EFD7FDF2FE1DFE4AFE78FEA7FED7FF07FF3803  
:18273800FF6AFF9CFFCE000000320064009600C800F9012901590188BE  
:1827500001B601E3020E02390262028A02B002D402F703180336035370  
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:1027B0000159012900F900C80096006400320000A8  
:00000001FF

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end of file.

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### 135. Re: [DSP-93:1355] Re: New-PSK

From: fperkins@onramp.net  
Date: Sun, 13 Aug 1995 20:21:42 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508140121.UAA14502@mailhost.onramp.net>  
Rendered body type: text/plain

CQ Howard,

I think I goofed the port 2 stuff. Please see my message to David.

73 Frank WB5IPM

---

### 136. Re: [DSP-93:1358]

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 13 Aug 1995 22:12:13 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac546f0732fc@[204.96.0.140]>  
Rendered body type: text/plain

Bob Smith,

>>>>If you are measuring .85 VAC (I assume that is RMS), then that is about  
>>>>2.4 V p-p. That's probably way too high for the FSK modems.  
>

>Is there a way for me to measure p-p w/ a DVM?

If you assume it is a sine wave (if you have a good clean signal, probably  
not too far off) RMS = p-p / 2.828.

Or: p-p = RMS x 2.828

Ron W5RKN

also:  
rparsons@bga.com

---

### 137. TNC?

From: n7ryw@teleport.com (William Roth)  
Date: Sun, 13 Aug 1995 21:28:21 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508140427.VAA16025@desiree.teleport.com>  
Rendered body type: text/plain

Since the DSP-93 does not have a tnc, and since it obviously needs one to  
get proper use from it, I wonder what is available? Initially I might be  
using a PK-900, but that will be going back onto my boat later this year  
(where it belongs), and so I might as well start looking for something now.

It seems to me that by now someone must have come up with something without having to buy some sort of cheap MFJ item. Since the audio stages wouldn't be needed, even an 8051 would do the job of framing quite well. I was very surprised to find that the TNC-2 was not on the list of items that I can order from TAPR, especially since it is their design! Maybe I was looking in the wrong place?

I do definitely want to avoid the cheap junky stuff, and I certainly don't need anything fancy (like another PK-900) so any ideas on a quality unit would be appreciated. A kit would certainly be just fine. In fact, probably preferred as I could then just leave out the audio stuff and build it up to the disconnect.  
Any ideas?

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

### 138. Re: New-PSK

From: n7ryw@teleport.com (William Roth)  
Date: Sun, 13 Aug 1995 21:30:33 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508140429.VAA16358@desiree.teleport.com>  
Rendered body type: text/plain

I caught part of this thread today when the system got me up on this list.

First there was...

>As I recall from previous discussions, Frank always (and only) tunes down  
>as that is what Doppler ALWAYS does.

Not quite always. read on...

>I didn't implement "tune up" in any of my satellite modems because satellite  
>doppler shift always goes down :-).

It actually depends on which sideband you are using. Something to think about for all radios is that many will have better performance on one sideband, than the other. This is especially true with psk. Much of it is due to oscillator alignment in the radio, but some is also due to variations in the filter passband. One radio will be better in LSB, the other in USB. A few will be equally good in either, and the ones that are better on one or the other will vary in how much better.

I have noticed this with all brands of radios, so there really does need to be the opposite sense enabled in any PSK modem. My old TAPR analog unit has a front panel switch that accomplishes this (with center off), and the DSP-12 has a software selection for it. This is a must for getting the very best performance from any PSK Satellite Demodulator.

One other small item is that, depending on the design of the output circuit of the DSP-93, the output might need to be diode protected. The reason is if someone uses the microphone switches to power the up/down circuit in the radio, such as for voice, they are not applying power to the DSP.

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

### 139. Re: [DSP-93:1360] Re: New-PSK

From: w6shp@amsat.org (Howard Sodja)  
Date: Sun, 13 Aug 1995 22:24:42 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508140524.WAA03173@hopf.dnai.com>  
Rendered body type: text/plain

Hello Frank,

>CQ Howard,  
>

>I think I goofed the port 2 stuff. Please see my message to David.

>

>73 Frank WB5IPM

How did you goof? I had no problem with psk93x2b which you last sent me.

73

Howard Sodja, W6SHP In the SF Bay area

AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 140. All OK

From: dmedley@indirect.com (David Medley)  
Date: Sun, 13 Aug 1995 20:58:43 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508140358.UAA15079@bud.indirect.com>  
Rendered body type: text/plain

Frank/Ron/Howard

Frank your fix has fixed it. I could not resist going out to the shack and making a basic check. Port 2 now behaves just like port 1 and the 736 is happy. I will test it on the air tomorrow morning but I am sure it will work. I am relieved that it is not some obscure hardware problem.  
73 de Dave

---

## 141. Re: New-PSK

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@listserv.gmd.de>  
Date: Mon, 14 Aug 95 10:14:21 EST  
To: dsp-93@TAPR.ORG  
Message-ID: <199508140815.DAA15926@sys1.tapr.org>  
Rendered body type: text/plain

fperkins wrote:

>I didn't implement "tune up" in any of my satellite modems  
>because satellite doppler shift always goes down.

Please do not forget that this applies only to low circular orbits.  
Elliptical orbits will give both positive and negative doppler frequency shifts during the same pass.  
Waiting for AMSAT Phase 3.

Boris Smeds DJ0EX SM0GJ

End of Message

---

## 142. WA5VMS

From: Bob Morgan <morganb@tenet.edu>  
Date: Mon, 14 Aug 1995 07:05:32 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508141205.HAA13995@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain

Joe called on the phone a little later on and reported that he had tried radio port 2, and that when he installed an option jumper for that channel from the +5v pullup resistor to pin 4 of the DB-25 (this sets port 2 U/D option) that the DC voltage on that strap fell to 0v, that is it must have been shorted. I suppose that since the source had a pullup resistor in series that it didn't hurt anything.

I told him of my experiences with thermal problems, and asked him if he would take some unregulated voltage measurements and report them, so here they are. I got this message from him over TexNet the next morning. Looks like he is running even hotter than I was.

This is a propagation dependant path, it works 2-4 times/week. We have one too few nodes between Tex and Okla, and are shooting a 90 mile 9600b path on uhf, with misoriented antennas and bad freq error. The intermediate node that doesn't work is the one Joe and I both went 300 miles to work on, and it didn't last. So what you see here is really a double hop crammed into one.

73 de Bob

-----from Joe WA5VMS, forwarded thru WB5AOH -----

r 184

| MSG# | TYPE | TO | FROM | AT | DATE | SUBJECT |
|------|------|----|------|----|------|---------|
|------|------|----|------|----|------|---------|

|                                         |   |         |         |        |             |       |
|-----------------------------------------|---|---------|---------|--------|-------------|-------|
| 0184                                    | * | WB5AOH0 | WA5VMSB | MUSKOG | 950814/0607 | DSP93 |
| Bob, I measured the following voltages: |   |         |         |        |             |       |
| DSP Engine 10.72 V to the 7805          |   |         |         |        |             |       |
| Audio I/O 11.22 V to the 7805           |   |         |         |        |             |       |
| Audio I/O 13.87 V to the 7905           |   |         |         |        |             |       |



Also found a problem in the TNC interface cable, the one from the Audio I/O TNC connector to the DB-25 on the back panel. Don't remember what the DB25 pin #'s are I know one is 4 and I think the other is 16, these translate to 5 & 6 on the TNC header, are shorted together. May be more. My TNC behaved a little strange. From what I can gather, the problem may be in the DB25 plug where the ribbon cable is crimped. More later.  
73, Joe

-----  
Robert Morgan  
WB5A0H  
Austin Texas  
morganb@tenet.edu

---

## 143. KCTT

From: "Lawrence F. Johnston" <ljohnsto@carbon.cudenver.edu>  
Date: Mon, 14 Aug 1995 07:06:13 -0600 (MDT)  
To: dsp93 <dsp-93@tapr.org>  
Message-ID: <Pine.OSF.3.91.950814070011.1901A-100000@carbon.cudenver.edu>  
Rendered body type: text/plain

My DSP-93 is assembled and appears to be working correctly.

I have also completed wiring the interface with the MFJ-1274, and am preparing to wire the radio interface cables between the DSP-93 and the FT736R.

Since I have the Kansas City Tracker and Tuner board and plan to use WISP, am I correct that I should only connect the TD, RD, GND, and PTT lines from the DSP, since the frequency up and down tuning should be handled by the KCTT?

Larry, W0EIE

---

## 144. Re: [DSP-93:1368] KCTT

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Mon, 14 Aug 1995 13:39:12 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508141359.JAA14021@camel.campbell.edu>  
Rendered body type: text/plain

The short answer is yes, if you plan to use the KCTT for ALL of your tuning.

The mic button clicks are implemented in a couple of the modems for the DSP-93, including the PSK birds [AO-13 400pbs included (I think Frank has clicks in the latest version??)] If you plan to use these modems and WANT the dsp-93 to supply button clicks, you probably should connect the up/down lines.

If you are using the KCTT for the PSK birds, too then you won't need the button clicks.

Oh, the hot\_hf93 modem (also know as just "modem" = RTTY, etc) implements the button clicks for use on an HF rig to move the VF0.

I made one cable that HAS the up/down lines wired to an 8 pin mic plug for PSK, AFSK, HF, and a second cable that does NOT have the up/down lines that mates to my "proprietary" (read that, MAKESHIFT!) connector for FSK from my TS-790A.

At 08:16 AM 8/14/95 -0500, you wrote:

>My DSP-93 is assembled and appears to be working correctly.

>

>I have also completed wiring the interface with the MFJ-1274, and

>am preparing to wire the radio interface cables between the

>DSP-93 and the FT736R.

>

>Since I have the Kansas City Tracker and Tuner board and plan to

>use WISP, am I correct that I should only connect the TD, RD, GND, and

>PTT lines from the DSP, since the frequency up and down tuning should be  
>handled by the KCTT?

>

>Larry, W0EIE

>

>

>

>

## 145. Re: [DSP-93:1367] WA5VMS

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Mon, 14 Aug 1995 13:45:19 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508141405.KAA14044@camel.campbell.edu>  
Rendered body type: text/plain

I found a connection problem in my ribbon cable at one time, too. If you are having problems that can be narrowed down to TNC interfacing, it might be worth checking your ribbon cable that runs from the DSP93 top board to the back case connector for continuity. I "fixed" mine with a few raps of a hammer to all of the connectors on the ribbon cable.

//lots deleted

>Also found a problem in the TNC interface cable, the one from the Audio I/O  
>TNC connector to the DB-25 on the back panel. Don't remember what the DB25  
>pin #'s are I know one is 4 and I think the other is 16, these translate to  
>5 & 6 on the TNC header, are shorted together. May be more. My TNC behaved a  
>little strange. From what I can gather, the problem may be in the DB25 plug  
>where the ribbon cable is crimped. More later.  
>73, Joe  
>  
>-----  
>  
>Robert Morgan  
>WB5AOH  
>Austin Texas  
>morganb@tenet.edu  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 146. dspload

From: hank@cospc.com (Hank Pustarfi)  
Date: Mon, 14 Aug 1995 10:00:03 -0400 (EDT)  
To: dsp-93@tapr.org (dsp-93@tape.org)  
Message-ID: <m0si03g-0005ThC@bonzai.cospc.com>  
Rendered body type: text/plain

Has anyone done a port of dspload.c to linux/\*UNIX? If so could you pass it along?

Thanks Hank K3WGV

---

## 147. PSK doppler issues

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Mon, 14 Aug 1995 14:07:48 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508141428.KAA14165@camel.campbell.edu>  
Rendered body type: text/plain

Bill,

Well, for what it's worth, no matter WHICH sideband you listen to, the freq. STILL goes down on the PSK birds.

I think the way that the TAPR-PSK hardware modem (I have one, too) deals with doppler may be inherently different than the DSP-93 software.

In any event, I'll try LSB with the PSK modems and see how it goes...I'll bet your hunch is right Bill, and that the way one deals with doppler will have to be revisited if one chooses to use the LSB mode for reception.

Frank is \*VERY\* thorough and my bet is that he has already considered this or even experimented with this notion.

>>I didn't implement "tune up" in any of my satellite modems because satellite  
>>doppler shift always goes down :-).  
>  
>It actually depends on which sideband you are using. Something to think

>about for all radios is that many will have better performance on one  
>sideband, than the other. This is especially true with psk. Much of it is  
>due to oscillator alignment in the radio, but some is also due to variations  
>in the filter passband. One radio will be better in LSB, the other in USB. A  
>few will be equally good in either, and the ones that are better on one or  
>the other will vary in how much better.  
>  
>I have noticed this with all brands of radios, so there really does need to  
>be the opposite sense enabled in any PSK modem. My old TAPR analog unit has  
>a front panel switch that accomplishes this (with center off), and the  
>DSP-12 has a software selection for it. This is a must for getting the very  
>best performance from any PSK Satellite Demodulator.  
>  
>One other small item is that, depending on the design of the output circuit  
>of the DSP-93, the output might need to be diode protected. The reason is if  
>someone uses the microphone switches to power the up/down circuit in the  
>radio, such as for voice, they are not applying power to the DSP.  
>  
>>From Bill, n7ryw@teleport.com  
>Amsat NA Life Member #2109  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 148. Re: [DSP-93:1371] dspload

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Mon, 14 Aug 1995 14:24:32 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508141444.KAA14214@camel.campbell.edu>  
Rendered body type: text/plain

Hank, I will forward in private three messages to you that matched my search for "linux" from my personal DSP-93 archives...at least you can see who else "asked about Linux".

At 09:08 AM 8/14/95 -0500, you wrote:  
>  
>Has anyone done a port of dspload.c to linux/\*UNIX? If so could you  
>pass it along?  
>  
>Thanks Hank K3WGV  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 149. Re: [DSP-93:1363] Re: New-PSK

From: Roy Welch <rdw@crl.com>  
Date: Mon, 14 Aug 1995 07:43:34 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950814074109.11827A-100000@crl4.crl.com>  
Rendered body type: text/plain

Regardless of the sideband, the "radio" frequency will still go down. Audio frequencies modulated onto the radio signal will go higher or lower depending on the sideband used, but the RF frequency will always go down.

73, Roy -- W0SL

On Sun, 13 Aug 1995, William Roth wrote:

> I caught part of this thread today when the system got me up on this list.  
>  
> First there was...  
>  
> >As I recall from previous discussions, Frank always (and only) tunes down  
> >as that is what Doppler ALWAYS does.  
>  
> Not quite always. read on...

>  
> >I didn't implement "tune up" in any of my satellite modems because satellite  
> >doppler shift always goes down :-).  
>  
> It actually depends on which sideband you are using. Something to think  
> about for all radios is that many will have better performance on one  
> sideband, than the other. This is especially true with psk. Much of it is  
> due to oscillator alignment in the radio, but some is also due to variations  
> in the filter passband. One radio will be better in LSB, the other in USB. A  
> few will be equally good in either, and the ones that are better on one or  
> the other will vary in how much better.  
>  
> I have noticed this with all brands of radios, so there really does need to  
> be the opposite sense enabled in any PSK modem. My old TAPR analog unit has  
> a front panel switch that accomplishes this (with center off), and the  
> DSP-12 has a software selection for it. This is a must for getting the very  
> best performance from any PSK Satellite Demodulator.  
>  
> One other small item is that, depending on the design of the output circuit  
> of the DSP-93, the output might need to be diode protected. The reason is if  
> someone uses the microphone switches to power the up/down circuit in the  
> radio, such as for voice, they are not applying power to the DSP.  
>  
> >From Bill, n7ryw@teleport.com  
> Amsat NA Life Member #2109  
>  
>  
>

---

### 150. Re: [DSP-93:1362] TNC?

From: Roy Welch <rdw@crl.com>  
Date: Mon, 14 Aug 1995 07:45:36 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950814074438.11827B-100000@crl4.crl.com>  
Rendered body type: text/plain

You might see if PacComm still has any older TNC-200 units. They are a  
TNC-2 clone and look just like one. I have three here and they work fine.

73, Roy

On Sun, 13 Aug 1995, William Roth wrote:

> Since the DSP-93 does not have a tnc, and since it obviously needs one to  
> get proper use from it, I wonder what is available? Initially I might be  
> using a PK-900, but that will be going back onto my boat later this year  
> (where it belongs), and so I might as well start looking for something now.  
>  
> It seems to me that by now someone must have come up with something without  
> having to buy some sort of cheap MFJ item. Since the audio stages wouldn't  
> be needed, even an 8051 would do the job of framing quite well. I was very  
> surprised to find that the TNC-2 was not on the list of items that I can  
> order from TAPR, especially since it is their design! Maybe I was looking in  
> the wrong place?  
>  
> I do definitely want to avoid the cheap junky stuff, and I certainly don't  
> need anything fancy (like another PK-900) so any ideas on a quality unit  
> would be appreciated. A kit would certainly be just fine. In fact, probably  
> preferred as I could then just leave out the audio stuff and build it up to  
> the disconnect.  
> Any ideas?  
>  
>  
> >From Bill, n7ryw@teleport.com  
> Amsat NA Life Member #2109  
>  
>  
>

---

### 151. Re: [DSP-93:1366] Re: New-PSK

From: Roy Welch <rdw@crl.com>  
Date: Mon, 14 Aug 1995 07:53:11 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950814074835.11827C-100000@crl4.crl.com>  
Rendered body type: text/plain

I believe Boris is correct. If the radial velocity toward the observer  
increases after the signal is acquired, as it will when a satellite

starts falling back toward perigee from apogee, the RF frequency will be perceived as increasing. This will happen, as he says, in the elliptical orbits.

On Mon, 14 Aug 1995, Smeds, Boris wrote:

```
>
> fperkins wrote:
> >I didn't implement "tune up" in any of my satellite modems
> >because satellite doppler shift always goes down.
>
> Please do not forget that this applies only to low circular orbits.
> Elliptical orbits will give both positive and negative doppler frequency
> shifts during the same pass.
> Waiting for AMSAT Phase 3.
>
> Boris Smeds DJ0EX SM0GJ
>
> End of Message
>
```

---

## 152. Re: [DSP-93:1372] PSK doppler issues

From: n7ryw@teleport.com (William Roth)  
Date: Mon, 14 Aug 1995 08:51:37 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508141550.IAA23671@desiree.teleport.com>  
Rendered body type: text/plain

Dear Mark+,

>Well, for what it's worth, no matter WHICH sideband you listen to, the freq.  
>STILL goes down on the PSK birds.

Quite true, the frequency itself, as displayed on the radio, does go in only one direction.

>I think the way that the TAPR-PSK hardware modem (I have one, too) deals  
>with doppler may be inherently different than the DSP-93 software.

But, the demodulator only sees the audio, not the radios' frequency display. When you switch sidebands, the audio gets inverted, and the Doppler appears to the demodulator as though it were going the 'wrong way'.

Here's a question for the 400 bps A0-13 telemetry demodulator. Are the CRC bytes preserved? There are two sent at the end of each and every block, and they are needed for proper telemetry decoding.

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

## 153. Re: [DSP-93:1375] Re: TNC?

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 14 Aug 1995 11:30:17 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508141630.LAA05190@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Just as an update to the group. The layout was completed for the TNC-95 this weekend and with luck the prototypes will be submitted later this week for a alpha-board run.

The project continues.

Cheers - Greg

According to Roy Welch:

```
>
> You might see if PacComm still has any older TNC-200 units. They are a
> TNC-2 clone and look just like one. I have three here and they work fine.
>
> 73, Roy
>
```

---

## 154. PACIFICON 95

From: Carol Byers <crlbyers@garlic.com>  
Date: Mon, 14 Aug 1995 11:22:43 -0700 (PDT)  
To: Howard Sodja <w6shp@amsat.org>  
Cc: dsp-93@tapr.org

Message-ID: <Pine.A32.3.91.950814111800.17411B-100000@garlic.com>

Rendered body type: text/plain

Hi Howard,

Was wondering if you were going to PACIFICON 95 in OCT ? Would like to set up an informal/formal "break-out SIG to discuss problems, info, etc on the DSP-93.

Any thoughts ?

Carol, W9HGI

---

## 155. Re: psk93x2b Bug

From: w6shp@amsat.org (Howard Sodja)

Date: Mon, 14 Aug 1995 13:18:41 -0700

To: dsp-93@tapr.org

Message-ID: <199508142018.NAA03732@hopf.dnai.com>

Rendered body type: text/plain

Hello Dave,

I suspect psk93x2b ran fine for me is because I do have the jumpers discussed in page 32 and 33 of 33 (DSP-93 Assembly manual). Another possibility is that I am using version 2.15 monitor EPROM.

As to what I am now jumpering, I am not sure if I can give you a straight answer for several reasons. First, version 2.15 had a bug that required jumpering that is different than the manual shows. I believe the bug was fixed in version 2.16. Second, I use the TAPR modem disconnect pcb in my PK-232, and that pcb has some traces that connect some pins. I recall pins 6 and 10 are connected, and maybe others as well. Third, I did some jumpering inside my DB-25 connector and some on the header inside the DSP-93, on the 20 pin ribbon cable connector. But I did it wrong so my DSP-93 did not work. I messed around until I got it to work, but I forgot to note on my schematic on page 32 of 33 what I now have jumpered inside my DB-25 connector. I see I have a jumper on pins 15 and 16 on the 20 ribbon cable inside the DSP-93, but I do not recall why.

Sorry I cannot help you with the jumpering info. But I do think that perhaps the fact that I am jumpered and you are not, and perhaps also that we have different EPROM versions may explain why pskx2b ran good for me and ran away for you. The important thing is that it is now running for both of us, and Frank found another bug cause by another variation of DSP-93 configurations that he was able to fix.

73

Howard Sodja, W6SHP In the SF Bay area

AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605

Microsats @ K0-23 and A0-16

w6shp@amsat.org

---

## 156. Re: [DSP-93:1368] KCTT

From: w6shp@amsat.org (Howard Sodja)

Date: Mon, 14 Aug 1995 13:18:45 -0700

To: dsp-93@tapr.org

Message-ID: <199508142018.NAA03743@hopf.dnai.com>

Rendered body type: text/plain

Hello Larry,

>Since I have the Kansas City Tracker and Tuner board and plan to  
>use WISP, am I correct that I should only connect the TD, RD, GND, and  
>PTT lines from the DSP, since the frequency up and down tuning should be  
>handled by the KCTT?

I strongly recommend you still wire in the frequency up/down lines even if you now plan to use the KCT, as this will give you more flexibility in the future. Remember the whole purpose we are going to DSP is to increase our future options. It will be much easier to wire in the frequency lines now and let that cable hang disconnected now, than go back and do a new cable later if you decide to not use the KCT. Also, HF modes can use these lines, and the KCT will not help you here. Finally, you should compare the KCT with the DSP frequency control and use which ever is best. Don't lock yourself in to just one frequency control option.

I use a Trakbox, and use that for FSK frequency control, but use my DSP-93 for PSK frequency control because it does a much better job.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 157. Re: [DSP-93:1379] PACIFICON 95

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 14 Aug 1995 15:35:10 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508142035.PAA27352@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

If you need materials for a meeting -- let me know Carol. Can have the office mail you stuff.

Cheers - Greg

According to Carol Byers:

>  
> Hi Howard,  
>  
> Was wondering if you were going to PACIFICON 95 in OCT ? Would like to  
> set up an informal/formal "break-out SIG to discuss problems, info, etc on  
> the DSP-93.  
>  
> Any thoughts ?  
>  
> Carol, W9HGI  
>

---

## 158. Adaptive PKT modem

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 14 Aug 1995 16:24:10 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac5567147a48@[204.96.0.66]>  
Rendered body type: text/plain

I have added Bob Morgan's patch to sense the port initialization straping and my code to automatically adapt the PTT polarity to the port initialization straping to the PKT (1200 bps) modem. The source and object files have been uploaded to ftp.tapr.org.

ftp://ftp.tapr.org/tapr/dsp93/software/PKTAD.ASM  
ftp://ftp.tapr.org/tapr/dsp93/software/PKTADP1.OBJ  
ftp://ftp.tapr.org/tapr/dsp93/software/PKTADP2.OBJ

If these check out ok, I'll fix-up the FSK modems also.

The problem this fixes is that the "old" modem used active low PTT and UP/DN no matter what the strapping was set for. So if your radio used active high UP/DN, the modem constantly slewed the frequency as soon as the modem started. Now, UP/DN stay fixed at the initialization levels. Also the sense of PTT is determined by the strapping so active HI PTT may be used.

Feed back, please.

Ron W5RKN

also:  
rparsons@bga.com

---

## 159. New PSK

From: dmedley@indirect.com (David Medley)  
Date: Mon, 14 Aug 1995 15:27:27 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508142227.PAA03839@bob.indirect.com>  
Rendered body type: text/plain

Hi Frank. Everything is just fine. I ran the "h" version on port 2 with PACSAT and LUSAT this morning. PACSAT passed almost directly overhead and the DSP did not miss a beat. The signal from LUSAT was extremely weak and I seem to remember that on Mondays it goes on to low power, something less than a watt. Anyway I worked with it without any trouble altho the data rates were a little less than PACSAT which was very strong. The only comment I have, Frank, is that the smart tune light (1) is a bit on

the dim side. I think you did brighten it up on one of your other modems.  
Thanks for the help, Frank. I will continue using this modem until you make an official release.  
I have talked with Howard and he has a different Monitor version as well as doing some strapping on the modem disconnect. I have avoided doing this because it reduces the flexibility of the system for future projects.  
Software solutions are to be preferred I think.  
73 de Dave KI6QE

---

## 160. Re: [DSP-93:1378] Re: TNC?

From: n7ryw@teleport.com (William Roth)  
Date: Mon, 14 Aug 1995 16:08:55 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508142307.QAA02647@desiree.teleport.com>  
Rendered body type: text/plain

Lately, Greg wrote,

>Just as an update to the group. The layout was completed for the TNC-95  
>this weekend and with luck the prototypes will be submitted later this week  
>for a alpha-board run.  
>  
>The project continues.

I would like to get some more information on this unit. If it will be out fairly soon (next couple of months) like I have heard, I might just wait and do it this way. I can use the PK-900 in the interim.

To help me decide if I should wait, could someone send me some basic design information, and an idea on pricing?

Thanks

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

## 161. Re: [DSP-93:1382] Re: PACIFICON 95

From: Carol Byers <crlbyers@garlic.com>  
Date: Mon, 14 Aug 1995 16:48:21 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950814164235.15330A-100000@garlic.com>  
Rendered body type: text/plain

Hi Greg, that would be great...will see if there is enough interest to set up a DSP-93 SIG at PACIFICON ... I'm still in the process of getting my DSP-93 online, and don't beleive there is any organized group here. Can't make the DCC this year, so thought I try to get something going in the Bay Area ?

On Mon, 14 Aug 1995, Greg Jones wrote:

> If you need materials for a meeting -- let me know Carol. Can have the  
> office mail you stuff.  
>  
> Cheers - Greg  
>  
> According to Carol Byers:  
> >  
> > Hi Howard,  
> >  
> > Was wondering if you were going to PACIFICON 95 in OCT ? Would like to  
> > set up an informal/formal ""break-out SIG to discuss problems, info, etc on  
> > the DSP-93.  
> >  
> > Any thoughts ?  
> >  
> > Carol, W9HGI  
> >  
> >  
>

---

## 162. Re: [DSP-93:1386] Re: PACIFICON 95

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 14 Aug 1995 19:19:41 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508150019.TAA17120@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain



If you are in Longbeech for the SW ARRL CONvention -- come by an visit.

Cheers - greg

According to Carol Byers:

```
>
> Hi Greg, that would be great...will see if there is enough interest to
> set up a DSP-93 SIG at PACIFICON ... I'm still in the process of getting
> my DSP-93 online, and don't beleive there is any organized group here.
> Can't make the DCC this year, so thought I try to get something going in
> the Bay Area ?
>
> On Mon, 14 Aug 1995, Greg Jones wrote:
>
> > If you need materials for a meeting -- let me know Carol. Can have the
> > office mail you stuff.
> >
> > Cheers - Greg
> >
> > According to Carol Byers:
> > >
> > > Hi Howard,
> > >
> > > Was wondering if you were going to PACIFICON 95 in OCT ? Would like to
> > > set up an informal/formal ""break-out SIG to discuss problems, info, etc on
> > > the DSP-93.
> > >
> > > Any thoughts ?
> > >
> > > Carol, W9HGI
> > >
> >
> >
>
```

---

### 163. Re: [DSP-93:1376] Re: New-PSK

From: fperkins@onramp.net  
Date: Mon, 14 Aug 1995 20:00:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508150100.UAA06822@mailhost.onramp.net>  
Rendered body type: text/plain

CQ Boris & Roy,

I agree. "Tune up" needs to be added in time for P3D!

73 Frank WB5IPM

---

### 164. Re: [DSP-93:1383] Adaptive PKT modem

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Tue, 15 Aug 1995 01:41:56 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508150202.WAA00581@camel.campbell.edu>  
Rendered body type: text/plain

Good work, guys!

Ron, your feedback is good. PKTADP1 works like a champ. Thanks!

At 04:31 PM 8/14/95 -0500, you wrote:

```
>I have added Bob Morgan's patch to sense the port initialization strapping
>and my code to automatically adapt the PTT polarity to the port
>initialization strapping to the PKT (1200 bps) modem. The source and object
>files have been uploaded to ftp.tapr.org.
>
>ftp://ftp.tapr.org/tapr/dsp93/software/PKTAD.ASM
>ftp://ftp.tapr.org/tapr/dsp93/software/PKTADP1.OBJ
>ftp://ftp.tapr.org/tapr/dsp93/software/PKTADP2.OBJ
>
>
>If these check out ok, I'll fix-up the FSK modems also.
>
>The problem this fixes is that the "old" modem used active low PTT and
>UP/DN no matter what the strapping was set for. So if your radio used
>active high UP/DN, the modem constantly slewed the frequency as soon as the
>modem started. Now, UP/DN stay fixed at the initialization levels. Also the
>sense of PTT is determined by the strapping so active HI PTT may be used.
>
```

>Feed back, please.  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 165. Re: [DSP-93:1349] anotherHotOne

From: Bob Stricklin <bstrick@dallas.net>  
Date: Mon, 14 Aug 1995 21:00:56 -0500  
To: dsp-93@tapr.org  
Message-ID: <9508150200.AB06883@dns>  
Rendered body type: text/plain

Thanks for your detailed measurements. A few comments:

The National data book (Not sure what vendor TAPR shipped for Regulators) rates the typical thermal characteristics for the T0220 package as 4 degrees C/W junction to case. So if we round your worst measurement off to 170 F or 77 C, and we go with a regulated voltage drop of 5V (10V - 5V) and we assume the regulator is delivering 700 mA to the circuit then the power drop will be 3.5 Watts. The die junction temperature would then be about 4 X 3.5 or 14 C + 77 C or 91 C. The National die is rated with a max junction temperature of 150 C which is about the point that the regulator will go into self protection mode. You are well below the max temperature.

While the heat sink temp is high and it will burn you if you touch it should not be causing a voltage problem with the numbers you have listed.

If you have a regulator other than National I doubt the numbers would be much different.

You can improve the life of the regulators by lowering the temperature. So mounting them on the bottom of the case should reduce the junction temperature. This has been done by others with no problems.

At 06:27 PM 8/13/95 -0500, you wrote:

>  
>Well I spoke too soon. But that isn't unusual. At least I didn't drive  
>300 miles to a remote node. That happened a couple of weeks ago,  
>and it quit on the return trip. Another story.  
>  
>About an hour after I reported here that the DSP93 was running  
>continuously for about a day, it crashed. So I treated it as  
>a thermal problem, and took some data. Whether or not it IS thermal  
>I do not know for sure. It was just hot at the time.  
>  
>To start with, I had an A/C problem over the weekend, and the ambient  
>in the apartment is elevated and a little uncomfortable. I suppose  
>the condenser fan quit. Anyhow I thought it ought to be a good test,  
>and it was. Maybe somewhere in this data is a useful tidbit, either  
>by itself or in comparison to other units. The unit was still running  
>PKT with my init patch previously reported on. I walked by to check it  
>and found LED #5 and #6 lit up steady, and received audio no longer  
>caused any flickering. The TNC2 was still fat dumb and happy. I initiated  
>a connect request, and the TNC keyed up, but the modem and the radio didn't,  
>and there was no LED activity on the modem. So I started taking measurements.  
>  
>I happen to have a thermocouple module for the DVM, and a fine gage  
>open bead K thermocouple for it. With the case still on, and all undisturbed,  
>I took ambient and case surface temperatures. Ambient was 89 F.  
>Case temperatures varied from 105 (all readings Deg F) on the right side of  
>the top of the case, to 109 on the left rear top corner, not surprisingly  
>near the regulators. I also took a calibration check on the T/C under  
>my tongue and it showed 96.5. Probably a bit light but not too noteworthy.  
>That instrument has a range of 200 F. as best as I can tell, and has some  
>builtin linearization to read directly on a 200 mV scale.  
>  
>Then I lifted the lid and started taking DC voltage measurements as

```

>quick as I could. Found 4.96 and -4.96 respectively on the regulated
>buses. Found 5.02 on Both of the balancing resistors that we all have
>been discussing. Unreg voltages on the regulator inputs were 8.91 v
>on the Digital board, and 9.57 v on the Analog board. Then with the
>lid still off I took some heatsink temperatures. The upper heatsink
>mounting nut was running 140 F and the lower sink nut was running 138 F.
>The -reg VR202 tab (has no sink, runs electrically live) measured 150 F.
>Its unregulated voltage input was -13.0 v.
>AC input at the input jack was 9.62 vac. (I don't think I have a true rms dvm).
>AC line was 119.6 vac.
>
>Transformer came with the kit, is Jameco 9vac 1500 mA, model AC915F5.
>
>I managed to hook the t/c around an edge of the upper heatsink and lowered
>the case lid and watched it. It started at 138, and rose moderately fast
>after I lowered the lid back on, leveling off at 166 F. Then I lifted the
>lid and quickly rechecked VR202, it was 167 F then.
>
>I took a dab of tape and taped the t/c to 3 different IC's one at a
>time, and put the lid on each time to stabilize and read. First the
>32044 A/D: started at 115, stabilized at 127 F.
>Next the 16550 uart: started at 117, stabilized at 123 F.
>Last the DSP processor: Had to use a tuning wand to reach under and
>stick the tape and t/c down, don't know how good a thermal contact I
>made (the first two I mashed down with a finger):
>started at 125, stabilized at 134 F.
>
>The Program I was running was crashed, and probably no activity was
>taking place on the peripherals. The CPU I haven't a clue. Anyhow I
>wonder what the heat dissipation would have been on the 32044 if it was
>doing anything useful. I did hook up the scope and go looking
>around the 32044 to see what, if anything, it was doing. There was no
>activity except for the master clock, which had a good looking fullscale
>clock with some overshoot and ringing (pin 6). All this testing was
>with the cover off. The following pins were at +5 hi:
>5, 4, 14, 10, 11, 3.
>note: Pin 12 (dx) was intermediate, and measured 3.24v with dvm. No
>activity. I wonder here, unless it is tristated, what is going on and
>if it is significant.
>The ref voltage at pin 8 was 3.09v and constant.
>
>All the above were taken without interrupting power or pushing reset.
>
>I pushed the reset button, connected to the serial port and reloaded
>the same program. It came up and worked packet as before, this time
>the lid is off, noise or not.
>
>The voltage testing I did during construction, prior to IC plugin, is
>as follows, of course unloaded:
>
>Board 1: reg 5.03v, unreg 13.5v.
>
>Board 2: reg 5.02v, unreg 13.07v.
> reg -4.94v, unreg -13.51v.
> reg 5.00v (C227)
>
>AC sec: 10.2vac, AC line: 117 vac.
>
>Like I say, maybe there are useful tidbits of information in this data.
>
>I am seriously thinking of relocating the main regulators to the case
>mounting screw holes (if thats what they are for) and putting a heatsink
>on the -5v regulator.
>
>73 de Bob
>
>Robert B. Morgan
>WB5AOH
>Austin Texas
>morganb@tenet.edu
>
>

```

Bob Stricklin, N5BRG

## 166. Re: [DSP-93:1377] Re: PSK doppler issues

From: fperkins@onramp.net  
Date: Mon, 14 Aug 1995 21:34:19 -0500

To: dsp-93@tapr.org  
Message-ID: <199508150234.VAA16393@mailhost.onramp.net>  
Rendered body type: text/plain

CQ Bill,

The AO-13 telemetry modem outputs 514 bytes following sync vector detection. I use P3C.EXE and I think this program expects the CRC bytes.

73 Frank WB5IPM

---

## 167. WEFAX anyone?

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Tue, 15 Aug 1995 02:41:27 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508150301.XAA00729@camel.campbell.edu>  
Rendered body type: text/plain

Hello All,

With the hurricane off the east coast over here, I was wondering if anyone has done any HF WEFAX code writing for the DSP-93? I know Frank has done the APT stuff, but I don't have the receiver for that.

I HATE the way my PK-232 deals with it...in fact, I don't even have my dot-matrix printer anymore. Guess it's not an option...

Mark L. Hammond [KC4EBR]

---

## 168. RE: [DSP-93:1371] dspload

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Tue, 15 Aug 95 10:06:44 BST  
To: dsp-93@tapr.org  
Message-ID: <9508150906.AA17277@getafix.oasis.icl.co.uk>  
Rendered body type: text/plain

Hank, I have started a dspload for Linux. I only received my DSP-93 kit just over 3 weeks ago and have been on vacation for 2 weeks, and in the states for 1 week on business. As soon as the kit is built, I will get back to the development.

John Melton, g0orx/n6lyt (g0orx@amsat.org)

---

## 169. Re: [DSP-93:1127] TNC for the DSP-93

From: DGrybos@aol.com  
Date: Tue, 15 Aug 1995 11:26:42 -0400  
To: dsp-93@tapr.org  
Message-ID: <950815112641\_54997682@aol.com>  
Rendered body type: text/plain

As you see, I'm way behind in reading mail. This board would be worth considering. Keep us informed.

73's  
David, KK6US

---

## 170. Re: PACIFICON 95

From: ssalek@h-e.com  
Date: Tue, 15 Aug 95 09:55:52 PDT  
To: dsp-93@tapr.org  
Message-ID: <0000009D.sm@h-e.com>  
Rendered body type: text/plain

Hello Carol and other DSP-93ers--

I am planning to attend Pacificon, so I would be interested in stopping in at any gatherings related to our DSP-93 project. I was an original beta builder of the DSP-93 and I have kept my unit fully up to date. I have been running all of the terrestrial applications (1200, 9600 packet and the HOT-HF modem) without any problems. I'd like to get into the satellite stuff but I still need to find (1) a suitable rig and (2) the time to work on it.

73, Stan  
KD6CVL  
Sonoma, CA

---

## 171. Can I order a DSP-93?

From: n7ryw@teleport.com (William Roth)  
Date: Tue, 15 Aug 1995 13:38:31 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508152037.NAA24148@desiree.teleport.com>  
Rendered body type: text/plain

I have been trying to order the DSP-93. I've tried calling the Tapr voice phone number for two days now. Today, I waited through a two hour lunch break, only to get the voice mail system when it said the office would be open. Does someone work there, or is it voice mail only? I don't give out my credit card number to voice mail (or E-mail), so any help in getting a real person would be very much appreciated.

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

## 172. [DSP-93:1383] Adaptive PKT and FSK modems

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 15 Aug 1995 16:02:27 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac56b86a3fe2@[204.181.160.94]>  
Rendered body type: text/plain

I have added Bob Morgan's patch to sense the port initialization strapping and my code to automatically adapt the PTT polarity to the port initialization strapping to the FSK (9600) and PKT (1200 bps) modems. The files have been uploaded to ftp.tapr.org. A small change was made to the PKT source.

ftp://ftp.tapr.org/tapr/dsp93/software/PKTAD.ASM  
ftp://ftp.tapr.org/tapr/dsp93/software/PKTADP1.OBJ  
ftp://ftp.tapr.org/tapr/dsp93/software/PKTADP2.OBJ  
ftp://ftp.tapr.org/tapr/dsp93/software/FSKADP1.OBJ  
ftp://ftp.tapr.org/tapr/dsp93/software/FSKADP2.OBJ

The FSK modems have not been extensively tested. These are analogous to the following on the distribution diskettes:

|             |                                            |
|-------------|--------------------------------------------|
| fsk93u1.obj | port 1, std 15% filter (U0-22/terrestrial) |
| fsk93u2.obj | port 2, std 15% filter (U0-22/terrestrial) |

A change is the LED4 is PTT to conform to the usage in the PKT modems.

The problem this fixes is that the "old" modems used active low PTT and UP/DN no matter what the strapping was set for. So if your radio used active high UP/DN, the modem constantly slewed the frequency as soon as the modem started. Now, UP/DN stay fixed at the initialization levels. Also the sense of PTT is determined by the strapping so active HI PTT may be used.

Feed back, please.

Ron W5RKN

also:  
rparsons@bga.com

---

## 173. Re: [DSP-93:1396] Can I order a DSP-93?

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 15 Aug 1995 16:15:17 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508152115.QAA15863@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain

Did you leave a message for Dorothy to call you back ?

The voice mail system works all the time...Dorothy only answers the phone when someone selects a box that directs it to her during office hours.

I just talked to her and she said that you had not left any messages -- so she was not aware of your call. If you don't leave a message the office can't help you.

Also -- there are no office hours on Monday. Office hours are Tue - Fri 9am - 12noon, 3 - 5pm CST. I believe the voice system states this.

Look forward to you making contact.

```
> I have been trying to order the DSP-93. I've tried calling the Tapr voice
> phone number for two days now. Today, I waited through a two hour lunch
> break, only to get the voice mail system when it said the office would be
> open. Does someone work there, or is it voice mail only? I don't give out my
> credit card number to voice mail (or E-mail), so any help in getting a real
> person would be very much appreciated.
>
> >From Bill, n7ryw@teleport.com
> Amsat NA Life Member #2109
>
>
```

```
> If you are in Longbeech for the SW ARRL COnvention -- come by an visit.
>
> Cheers - greg
>
> According to Carol Byers:
>
> > Hi Greg, that would be great...will see if there is enough interest to
> > set up a DSP-93 SIG at PACIFICON ... I'm still in the process of getting
> > my DSP-93 online, and don't beleive there is any organized group here.
> > Can't make the DCC this year, so thought I try to get something going in
> > the Bay Area ?
>
> > On Mon, 14 Aug 1995, Greg Jones wrote:
>
> > > If you need materials for a meeting -- let me know Carol. Can have the
> > > office mail you stuff.
> >
> > > Cheers - Greg
> >
> > > According to Carol Byers:
> > >
> > > > Hi Howard,
> > >
> > > > Was wondering if you were going to PACIFICON 95 in OCT ? Would like to
> > > > set up an informal/formal ""break-out SIG to discuss problems, info, etc on
> > > > the DSP-93.
> > >
> > > > Any thoughts ?
> > >
> > > > Carol, W9HGI
> > >
> >
>
>
```

Great news ... we'll count you in for PACIFICON 95. If we get enough

interest, would you be willing to help moderate the meeting, give a demo, etc. ?

On Tue, 15 Aug 1995 ssalek@h-e.com wrote:

>  
> Hello Carol and other DSP-93ers--  
>  
> I am planning to attend Pacificon, so I would be interested in stopping in at  
> any gatherings related to our DSP-93 project. I was an original beta builder of  
> the DSP-93 and I have kept my unit fully up to date. I have been running all of  
> the terrestrial applications (1200, 9600 packet and the HOT-HF modem) without  
> any problems. I'd like to get into the satellite stuff but I still need to find  
> (1) a suitable rig and (2) the time to work on it.  
>  
> 73, Stan  
> KD6CVL  
> Sonoma, CA  
>

---

### 176. Re: [DSP-93:1398] Re: Can I order a DSP-93?

From: n7ryw@teleport.com (William Roth)  
Date: Tue, 15 Aug 1995 15:48:04 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508152246.PAA27887@desiree.teleport.com>  
Rendered body type: text/plain

>The voice mail system works all the time...Dorothy only answers the phone  
>when someone selects a box that directs it to her during office hours.

A rather strange way of doing business, but I'll bite. What box would I then select to get directed to Dorothy???

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

### 177. Re: [DSP-93:1401] Re: Can I order a DSP-93?

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 15 Aug 1995 19:38:42 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508160038.TAA13930@beall.tenet.edu>  
Rendered body type: text/plain

Why Strange ? We have a volunteer at the office and we get calls almost 24 hours a day from all around the world. In addition, 50% of the people calling typically end up in one of the various information areas getting their question answered without taking up her time while she is working on shipping or doing other office things. Just depends on how you look at things - I guess.

Just call, listen to the voice system, and chose the one for making an order. I can't remember which it is...but the opening voice menu is less than 30 seconds total. The opening message is different for Lunch, Office Hours, and after hours...so that will tell you if someone will be in the office.

Cheers - Greg

According to William Roth:

>  
> >The voice mail system works all the time...Dorothy only answers the phone  
> >when someone selects a box that directs it to her during office hours.  
>  
> A rather strange way of doing business, but I'll bite. What box would I then  
> select to get directed to Dorothy???  
>  
> >From Bill, n7ryw@teleport.com  
> >Amsat NA Life Member #2109  
>  
>  
>

---

### 178. PKT-FSK patch tested

From: Bob Morgan <morganb@tenet.edu>  
Date: Tue, 15 Aug 1995 20:30:06 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508160130.UAA11215@beall.tenet.edu>  
Rendered body type: text/plain

I ftp'd the 4 .obj and the .asm, and retested PKTAD. PKTADP1 works fine with the yaesu-726. I moved the plug over to P2 and lost some performance, and for the time being, I am blaming it on the pot adjustments for the second port. Both ports behave as expected with active low PTT and active hi U/D. Haven't tested FSKAD. I will try to pass those off to W45VMS however and whenever the opportunity presents itself. Thought I might as well retest these myself since I started all of this.  
73 de Bob

Robert B. Morgan  
WB5A0H  
Austin, Texas  
morganb@tenet.edu

---

## 179. Re: [DSP-93:1372] PSK doppler issues

From: fperkins@onramp.net  
Date: Tue, 15 Aug 1995 20:49:06 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508160149.UAA08107@mailhost.onramp.net>  
Rendered body type: text/plain

August 15, 1995 @ 20:40 CDST

CQ Mark KC4EBR,

Here is the alpha code for the LSB, port 1 version of the PSK modem.  
Its untried, but I think it will work. Good luck with your mission.

73 Frank WB5IPM

```
:18200000FF801008FF80108AFF801090FF801008CE01C808CE07CE031D
:18201800CE08D00180356002E702FE801298D00100756002E702FE80D2
:182030001298D00140356002E702FE801298C800CE37CE20D001002089
:182048006004CA006061CE00CE1FD00100036061CE1FD001026360615D
:18206000CE1FD00100036061CE1FD001244A6061CE1FD0010003606177
:18207800CE1FD00124486061CE1FCE01D00100106004CA006062606315
:18209000606460656066606760686069606A606B606C606D606E606FC6
:1820A80060706071607260736074607560766077607E60786079607A1B
:1820C000607BCA0A607CD0010120607DD0010190607FC806CA00602055
:1820D8006021602260236024602560266027602A602B6029602C602D9D
:1820F000602E602F60306032C800D000007ECA00C806CA00602FE32F80
:182108008530C800CE005500FF80108720006060FE801094CE00CE2645
:1821200020616001CE00CE262072D00504006072E6722C60686F206F7C
:18213800D003028AF38010A62072D00502006072FF8010AA2072D0042D
:18215000FDF6072206AD0020688006E606AD0034000F28010B4606A74
:18216800296A686BD0011314006B586BCC20586C3C6F386BCE146E7015
:182180003C6F386CCE146E71CA00A000566356623C64BB983D63ABB16D
:18219800CE150B706D62CA00A0003C64A02E3D63A05B3D62A02ECE153F
:1821B0006D702070C8066031C800CA00A00056656653C67BB983D6609
:1821C800ABBI1CE150B716D65CA00A0003C67A02E3D66A05B3D65A02E89
:1821E000CE156D713C703871CE146E6D56683C69A7D4CE146D68206DF2
:1821F8000686068CA00A0003C68A7993D69B907CE156C69206960EDC
:18221000FE8012212070F38011162072D00540006072D00100016070C0
:18222800FF80111D2072D004BFFF6072D001FFFF60702070D20003985F
:18224000558A6080D10003FE5589A000CA00CB665C9012ADCE1560701E
:182258002070D00030067F48011472070D0020067F2801147C806203225
:18227000F480113FD00200016032F3801144C8082002D004FF7F6002BF
:18228800C800FF801151C8082002D00500806002C806D001FFE86032D4
:1822A000C800FE8011CA207FF38011688A732073D0040200F580116826
:1822B800207ED0050001607EC8082002D00500406002C800FF80117289
:1822D000207ED004FFF607EC8082002D004FFBF6002C8008A73567434
:1822E8002073CE19D00440006074F5801182207FF3801185CD01607F1F
:18230000FF801185D0010190607F20744C75F680118BCA0060762076D2
:18231800D00204FA6076D0034000F2801194607629766877D001131491
:18233000007758772074F68011A02077CE2360772277D004FFFC60016C
:182348002072D004FBFF6072E672C808E702C800EB7EFE8011B0CE26D6
:18236000C806D0010500602FE32F852FCA014E2FF68011C8CA00602F7C
:18237800E32F85302030D004005F60302030CD52F58011C8FF8004141F
:18239000C800CE265678CA00A0003C79A7DDCE156D78206E0078607862
:1823A800CA00A0003C78A0343D79A034CE156C79207CD0030001607C8D
:1823C000F4801220CA0A607C567ACA00A0003C7BA7DDCE156D7A2079D7
:1823D800007A607ACA00A0003C7AA0343D7BA034CE156C7B207DF4803E
:1823F0001202207BCD20F2801220D0010120607DFF801220207DD003A5
:182408000001607DD00300BAF3801219207ED0050080607EC806202EC6
:18242000C800F6801220207ED0050004607EFF801220207DF3801220EC
:18243800207ED004FFF7B607ECE26206FC8066029C800296AC806682631
:18245000D00113140026CC105826CC2058273C293826CE146E2A3C29EF
:182468003827CE146E2BCA00A000562156203C22BB983D21ABB1CE15DD
:18248000B2A6D20CA00A0003C22A02E3D21A05B3D20A02ECE156D2AEE
```



:18249800CA00A000562456233C25BB983D24ABB1CE150B2B6D23CA00EB  
:1824B000A0003C25A02E3D24A05B3D23A02ECE156D2B3C2A382BCE1495  
:1824C800E28562CCA00A0003C2DA7DDCE156D2C2028002C602CCA0047  
:1824E000A0003C2CA0343D2DA034CE156C2D202DC800D002003CF480B7  
:1824F800128B207ED0050040607E2072D004FEFF6072CA01C806602E42  
:18251000C800FF801297207ED004FFBF607E2072D00501006072CA00B1  
:18252800C806602EC800CE26C2FFFE80129EFE80129ECE26C2FFFE8033  
:1825400012A4FE8012A4CE26C2FFC3FF558BF89012A6558AFB9012A5DE  
:18255800CE26FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF8D  
:18257000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF6B  
:18258800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF53  
:1825A000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3B  
:1825B800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF23  
:1825D000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF0B  
:1825E800FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF3  
:18260000FFFFFFFFFFFFFFFFFFFFFFFFFFFFFFFF00010001000100010001CB  
:1826180000010001000100010001000100010001000000320064009676  
:1826300000C800F901290159018801B601E3020E02390262028A02B03C  
:1826480002D402F7031803360353036E0387039E03B203C403D403E12E  
:1826600003EC03F503FB03FF040003FF03FB03F503EC03E103D403C40E  
:1826780003B2039E0387036E03530336031802F702D402B0028A0262DE  
:182690000239020E01E301B601880159012900F900C800960064003252  
:1826A8000000FFCEFF9CF6AFF38FF07FED7FEA7FE78FE4AFE1DFDF2CA  
:1826C000FDC7FD9EFD76FD50FD2CFD09FCE8FCCAFCADFC92FC79FC6200  
:1826D800FC4EFC3CFC2CFC1FFC14FC0BFC05FC01FC00FC01FC05FC0B0F  
:1826F000FC14FC1FFC2CFC3CFC4EFC62FC79FC92FCADFCCAFCE8FD0943  
:18270800FD2CFD50FD76FD9EFD76FD2FE1DFE4AFE78FEA7FED7FF0729  
:18272000FF38FF6AFF9CFFCE000000320064009600C800F90129015928  
:18273800018801B601E3020E02390262028A02B002D402F70318033655  
:182750000353036E0387039E03B203C403D403E103EC03F503FB03FF61  
:18276800040003FF03FB03F503EC03E103D403C403B2039E0387036E9B  
:1827800003530336031802F702D402B0028A02620239020E01E301B640  
:1227980001880159012900F900C8009600640032000035  
:00000001FF

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Frank H. Perkins, Jr.

---

## 180. Re: [DSP-93:1397] Adaptive PKT and FSK modems

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 16 Aug 1995 01:50:56 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508160211.WAA08564@camel.campbell.edu>  
Rendered body type: text/plain

Good work, Ron. They all check out on the Knwd TS-790A with strapped lines.

At 16:18 8/15/95 -0500, you wrote:

>I have added Bob Morgan's patch to sense the port initialization straping  
>and my code to automatically adapt the PTT polarity to the port  
>initialization straping to the FSK (9600) and PKT (1200 bps) modems. The  
>files have been uploaded to ftp.tapr.org. A small change was made to the  
>PKT source.  
>  
>ftp://ftp.tapr.org/tapr/dsp93/software/PKTAD.ASM

```

>ftp://ftp.tapr.org/tapr/dsp93/software/PKTADP1.OBJ
>ftp://ftp.tapr.org/tapr/dsp93/software/PKTADP2.OBJ
>ftp://ftp.tapr.org/tapr/dsp93/software/FSKADP1.OBJ
>ftp://ftp.tapr.org/tapr/dsp93/software/FSKADP2.OBJ
>
>
>The FSK modems have not been extensively tested. These are analogous to the
>following on the distribution diskettes:
>
> fsk93u1.obj port 1, std 15% filter (U0-22/terrestrial)
> fsk93u2.obj port 2, std 15% filter (U0-22/terrestrial)
>
>A change is the LED4 is PTT to conform to the usage in the PKT modems.
>
>The problem this fixes is that the "old" modems used active low PTT and
>UP/DN no matter what the strapping was set for. So if your radio used
>active high UP/DN, the modem constantly slewed the frequency as soon as the
>modem started. Now, UP/DN stay fixed at the initialization levels. Also the
>sense of PTT is determined by the strapping so active HI PTT may be used.
>
>Feed back, please.
>
>
>Ron W5RKN
>
>also:
>rparsons@bga.com
>
>
>

```

Mark L. Hammond [KC4EBR]

---

## 181. Re: [DSP-93:1404] Re: PSK doppler issues

```

From: "Mark L. Hammond" <hammond@camel.campbell.edu>
Date: Wed, 16 Aug 1995 02:16:09 +0000
To: dsp-93@tapr.org
Message-ID: <199508160236.WAA08640@camel.campbell.edu>
Rendered body type: text/plain

```

I accept this mission...

```

At 21:00 8/15/95 -0500, you wrote:
>August 15, 1995 @ 20:40 CDST
>
>CQ Mark KC4EBR,
>
>Here is the alpha code for the LSB, port 1 version of the PSK modem.
>Its untried, but I think it will work. Good luck with your mission.
>
>73 Frank WB5IPM
>
>
>

```

Mark L. Hammond [KC4EBR]

---

## 182. PSK/LSB dandy!

```

From: "Mark L. Hammond" <hammond@camel.campbell.edu>
Date: Wed, 16 Aug 1995 04:14:39 +0000
To: dsp-93@tapr.org
Message-ID: <199508160435.AAA08969@camel.campbell.edu>
Rendered body type: text/plain

```

Frank,

I used your PSK/LSB on the end of an A0-16 pass (took me a while to figure out my "automated system" had loaded the \*USB\* version after I had loaded the LSB version....arghh!).

It works dandy! For those wondering, it still only requires the mic DOWN button clicks....

Mark L. Hammond [KC4EBR]

## 183. Yet another heatstroke

From: torfinn@spacetec.no (Torfinn Holand)  
Date: Wed, 16 Aug 1995 10:05:12 +0200  
To: dsp-93@tapr.org  
Message-ID: <9508160750.AA18850@jupiter.spacetec.no>  
Rendered body type: text/plain

As my kit was delivered with a 74ALS03, not the required 74S03, it has taken me some time to get my DSP-93 ready for testing. Two days ago I finally got hold of a couple of Texas Instrument 74S03 (at almost 4 US\$ each). After filling the last empty socket (U115) and powering the system it took less than half a minute

before the heatstroke hit the DSP-93! It was not difficult to localize the problem to the newly installed IC. I could keep test 4 (TESTLEDS) running forever by keeping U115 cold, but the program was running bananas as soon as the cooling process was halted. In monitor mode, running the processor at 20 MHz, everything was working OK. Installing another 74S03 did not solve the problem. I checked the power supply (4.96 V measured on pin 14) as well as the solder connections which all looked perfect.

According to my TTL data book the 7438 should be equivalent to the 7403. At work I found a Signetics 74F38 which I installed yesterday. Since then test 4 has been running continuously for more than 15 hours without failure, with the boards installed in the enclosure, placed in a narrow shelf in the shack with limited air circulation around the box. I will keep on running the test for another 12 hours before continuing with the other tests.

According to the data book the F38 is marginally faster than the S03. 2-3 nanoseconds seems to be the difference between success and failure!

Regards

Torfinn (la7sp@amsat.org)

---

## 184. "Cool Units" ?

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 16 Aug 1995 11:20:13 +0000  
To: dsp-93@tapr.org  
Cc: dsp93dev@tapr.org  
Message-ID: <199508161141.HAA13683@camel.campbell.edu>  
Rendered body type: text/plain

Just for the record, would builders from the most recent kit shipment who have successfully built and tested their DSP-93 units without seeing "heatstroke" symptoms please speak up, too? It would be good to know who has a "cool unit".

Albeit a slightly different board and components from a different shipment, my beta unit has been on 24 hrs a day/7 days a week since it was assembled and final component values agreed upon around 7/94. In the box, regulators running "hot", mostly running 9600 baud FSK modems. I track KO-23 and KO-25 daily using Wisp, and load a modem into the DSP-93 just before each pass.

Pretty good track record, if you ask me! I would definitely call my unit "cool" ;-)

Mark L. Hammond [KC4EBR]

---

## 185. RE: [DSP-93:1409] "Cool Units" ?

From: Bob Smith <rsmith@internetmci.com>  
Date: Wed, 16 Aug 1995 08:57:42 -0400  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BA6BB6.96A31500@usr18-dialup47.Atlanta.mci.net>  
Rendered body type: text/plain

My unit runs very hot but no heatstroke yet. Can't measure the temp but I can't keep my finger in the regs for longer than 10 seconds. I have had

the various FSK modems up for days at a time (with and without the cover on) w/ no unaided resets as others have experienced.

I did go out to the ratshack and get 2 more to-220 heat sinks and used the grease liberally to try to dissipate the heat.

Is there still a winmail.dat attachment with this message. I have no idea what that is - I have mime turned off.

```
begin 600 WINMAIL.DAT
M>)\^(AH,`0:0" ` $`~~~~~!`$`0>0!@` (````Y 0`~~~~~#H`$-@ 0`
M`@`~~~~(`@`!!) &`@`!`~~~~#`~~~~,`#`#`~~~~"P`/#@`~~~~"?/
M`0`~~~~#T`~~~~~@2L?I+ZC$!F=;@#=#0]4`@`~~~~!D<W M.3- =&%P<BYO
M<F<4TU44 !D<W M.3- =&%P<BYO<F<~~~~@`", $`~~~~%`4TU44 `
M`~~~~>`P`0`~~~~!`~~~~!D<W M.3- =&%P<BYO<F<`P`5# $`~~~~#`/X/!@`
M`!X`3`!`~~~~$@`~~~~=D<W M.3- =&%P<BYO<F<G`~~~~@`$+, $`~~~~5`
M4TU44#I$4U M.3- 5$%04BY/4D<~~~~P`0`~~~~+`$ Z`0`~~~~(!]@`!
M`~~~~!`~~~~~1*0$(@ <`&`~~~$E032Y-:6-R;W-09G0@36%I;"Y.;W1E
M`#$(`02`0`A`~~~~4D4Z(%M$4U M.3,Z,30P.5T@ (D-0;VP@56YI=' ,B(#`
MM`@`!8`#`X`~`#`+!P@`$` ( `#D`*@`#`%@`!2` `P` .`~~~RP<(`!`" `U
M`~~~~P`Y`0$@`$` (0`~~~~#@T-CE$0D$03!$-T-%,3%".$,W-#0T-34S-30P
M, # P`!(`0.0!@#<`P`$@`~~~~L` (P`~~~~~P`F`~~~~~+"D`~~~~~
M-@`~~~~~0`Y`$`1$.#7:[H!`@`!P`$`~~~~A`~~~~4D4Z(%M$4U M.3,Z,30P
M.5T@ (D-0;VP@56YI=' ,B(#`~~~~~@%Q`$`~~~~6`~~~~;IKU`_VK=MIA=>@
M$<ZXQT1%4U0`~~~~~@`># $`~~~~%`4TU44`~~~~~>`\,0`~~~~!<~~~~!R
M<VUI=&A :6YT97)N971M8VDN8V]M`~~~#`80"70R50,`!Q"-`0`~~~@`($`$`
M`~!E`~~~35E53DE44E5.4U9%4EE(3U1"551.3TA%05135%)/2T59151#04Y4
M345!4U52151(151%35!"551)0T%.5$M%15!-649)3D=%4DE.5$A%4D5'4T9/
M4DQ/3D=%4E1(04XQ,%-%0P`~~~~~"0D0`0`~~~%,~~~~!/'@`~~~(P,`~$Q:1G75
M$Y'7_P`*`0`%"0*H!>L"@P!0`0`())`@`!C: K <V5T,C<&`~;#`H,R`\\4`~~~!R
M0G$1XG-T96T`@S,W`N0`$P`*- 1&$S,Q((!,=6-I9&$@`"%#K` (&\\&4"@`T`*
M@ C/"-D/'H`*00VQ"V!N9S$PCC.44 L`%6%S,3@%T-AY('4#`5`<AO`!" F
M=@20&Z!H;P5 8G6)!4!N;QR@96%T$\\A`V!K92!Y$< N()L6P`!P)P5`!X!A
M<PAP71WP=!U@`T`3X`<XTFL(&,>@QW@91_ ;1N@ZF8+@&<$D` +@!]#&$#^
M9P0@`A`P!`?0(4,24 .1C1H0(!&P!;!N9',>0: \\@(!&`' & D,60?0W8*P,9I
M`&`$($932Q[!`%2:00@=1_ (E6H!.P(,\\=@";P`T`'<2`H`_`?4/LF`"/
M(">R`&`%0!]>2!:#5`&$@`B`I`*#`0`2(;P/\\+< VP)+ 80!&Q)N$$(!S QQU@
M$: D-&5X< 9Q"?`Z8PF`+@J%`H4@(&06D/P@9QU`*(,=0`#`8$1@/QC:R?S
M(5`%0!`!@!&?(GAO+3(!T!U3(W`+@&0_)N$&,25@*E$?4@G!'0`O`=-AL:6($
MD` = ;!N@+E+`'($N42V@!!`%(!V`50=80\\LG@0@*S(=\\!/'Q`#(!:P[0/P
M;@#`Q`N`J`G$0)`_0#0: >`C`H,Q]!!`>P?T$&$A4"/X`3$J,3;A$8!7
M** (G`3CA+206;2=B=-4(<&XJ46\\-T`X:K`J@NP-@$]!C!4`*A1=A`#`\\@`~~~
M$!`~~~~~P`1$`$`~~~!`~<PX%#:0=-KN@%`~~@PX%#:0=-KN@$>`#T`0`~
/`4`~~~~!213H@`~~~~/D`*
`
end
```

## 186. Re: PACIFICON 95

From: ssalek@h-e.com  
Date: Tue, 15 Aug 95 17:41:44 PDT  
To: dsp-93@tapr.org  
Message-ID: <000000A0.sm@h-e.com>  
Rendered body type: text/plain  
Hi Carol,

I don't know what my work schedule will be during that time, so I was just planning on attending PACIFICON on Saturday Oct. 21st. But if you do get enough interest in doing something that is specific to the DSP-93, my unit is available for use during the convention, and I should be available to help out on a panel, etc. As I mentioned, I haven't done any satellite stuff with the DSP-93 unit, but I recall that you have that capability. A real-time demo may be difficult to set up at PACIFICON, but I believe that TAPR has some demo videotapes that they have used at other meetings that demonstrate the neat features and performance.

73, Stan

## 187. DB-25 connector trouble

From: Bob Morgan <morganb@tenet.edu>  
Date: Wed, 16 Aug 1995 09:03:10 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508161403.JAA02425@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain  
RE: DB-25 connector troubles

I think that Joe may be on to something here with the ribbon cable connector on the DSP93 back panel. I looked at mine and it also is

inserted upside down in the connector. While I have not pinpointed the cause for sure, I did have an intermittent P1 PTT input for awhile, and I tested/inspected my own external TNC/DSP cable looking for it. I found nothing, and the problem went away. Wondering if it might turn up again?

I managed to get 3 of the 4 new PKTAD/FSKAD.OBJ programs stored on the NE OK TexNet message server for Joe before propagation fell out, so I am anticipating a report from Joe sometime in the next day or so.

Joe's comments follow-----

r 193

| MSG# | TYPE | TO | FROM | AT | DATE | SUBJECT |
|------|------|----|------|----|------|---------|
|------|------|----|------|----|------|---------|

|                                                                                                                                                                                                                                                                                                                     |     |         |         |         |             |       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------|---------|---------|-------------|-------|
| 0193                                                                                                                                                                                                                                                                                                                | * P | WB5A0H0 | WA5VMSB | MUSK0GE | 950814/2012 | Cable |
| Bob, I have verified that the problem is within the cable and not a solder bridge. Things are OK when I jumper across the TNC header. I have verified with a DVM that I have a short. I am assuming a bad crimp job. Will check that here in a few minutes. Having PTT problems too. Suspect the cable. More later. |     |         |         |         |             |       |
| 73, Joe                                                                                                                                                                                                                                                                                                             |     |         |         |         |             |       |

PMS CMD ? (B,K,L,R,S) >

r 195

| MSG# | TYPE | TO | FROM | AT | DATE | SUBJECT |
|------|------|----|------|----|------|---------|
|------|------|----|------|----|------|---------|

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |     |         |         |         |             |              |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----|---------|---------|---------|-------------|--------------|
| 0195                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | * P | WB5A0H0 | WA5VMSB | MUSK0GE | 950814/2225 | Ribbon cable |
| Bob, the problem was in the DB25 connector on the ribbon cable. The cable supplied with my kit had some wires shorted due to incorrect placement of the cable in the connector. The ribbon cable is a tight squeeze for the DB25 pin spacing. If you examine my cable under a jeweler's magnifier, you can see that one side of the cable, the insulation is flat all the way across. On the other side, it is slightly rounded. If the flat side is placed in the "notch" of the piercing pins on the connector(as mine was), you are guaranteed some short circuits. If the cable is turned over so the rounded side of the cable is in the notch, everything works OK. I have had enough fun for tonight. |     |         |         |         |             |              |
| 73, Joe                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |     |         |         |         |             |              |

----- end of Joe's comments-----

73 de Bob

Robert B. Morgan  
WB5A0H  
Austin Texas  
morganb@tenet.edu

---

## 188. Re: [DSP-93:1410] RE: "Cool Units" ?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 16 Aug 1995 10:55:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac57c4462ed5@[204.251.33.78]>  
Rendered body type: text/plain

Bob Smith

>My unit runs very hot but no heatstroke yet. Can't measure the temp but I  
>can't keep my finger in the regs for longer than 10 seconds. I have had  
>the various FSK modems up for days at a time (with and without the cover  
>on) w/ no unaided resets as others have experienced.

My input voltage to the 7805s is 9.0 VDC and I can hold on to either heatsink continuously without too much discomfort. The 7905 tab is warm but not hot. Its input voltage is about -13.5 VDC.

>I did go out to the ratshack and get 2 more to-220 heat sinks ans used the  
>grease liberally to try to dissipate the heat.

I also added a second heatsink and grease.

>Is there still a winmail.dat attachment with this message. I have no idea  
>what that is - I have mime turned off.  
>  
>  
>Attachment converted: aOppie:WINMAIL.DAT (????/----) (0000C07E)  
  
Yes!!!!!!

Ron W5RKN

also:  
rparsons@bga.com

---

### 189. Re: [DSP-93:1409] "Cool Units" ?

From: "Lawrence F. Johnston" <ljohnsto@carbon.cudenver.edu>  
Date: Wed, 16 Aug 1995 12:14:35 -0600 (MDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.OSF.3.91.950816120825.29923A-100000@carbon.cudenver.edu>  
Rendered body type: text/plain

I'm sure mine was one of the last units shipped, since it arrived during the first week of August.

Mine has been running for up to five hours a day with the cover on and although the top of the cover is warm, there does not seem to be any other problems.

I've still got a lot of work to do before I have everything hooked together an actually receiving a satellite. My DSP is finished. I've made the cable between the DSP and MFJ1274, but not the cable between the DSP and the FT736. I've also made the mods in the FT736 for 9600 bps data in and out and installed the additional mini stereo plug on the back of the FT736.

The DSP is communicating with my 386 computer, and I leave the TESTLED program running in the DSP whenever it is turned on, and it seems to work properly.

Larry, W0EIE

---

### 190. Re: [DSP-93:1409] "Cool Units" ?

From: Carol Byers <crlbyers@garlic.com>  
Date: Wed, 16 Aug 1995 11:09:31 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950816110824.10424C-100000@garlic.com>  
Rendered body type: text/plain

My unit seems to work no heating problems noted.

Carol, W9HGI

---

### 191. Re: [DSP-93:1411] Re: PACIFICON 95

From: Carol Byers <crlbyers@garlic.com>  
Date: Wed, 16 Aug 1995 11:12:10 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950816111108.10424D-100000@garlic.com>  
Rendered body type: text/plain

Hi Stan,

Hay that would be great...if we get any interest, will get the TAPR videos.

Carol, W9HGI

---

### 192. Re: [DSP-93:1408] Yet another heatstroke

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 16 Aug 1995 13:23:37 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508161823.NAA20949@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

Hello Torfinn,

I'll have Dorothy send you an S03 chip from the batch we are using and see if it will work or not. There are two different S03 chips that were shipped in

this last build. One set should have been from TI and ones that have been shipped to replace the ALS03 chips were an NTE part. I'll have to dig for a TI part.

I would be interested in finding out which S03 chips people have that are having problems, in case this is indeed something common among that group or something that has just effected Torfinn.

Dorothy will get them out today. We have been replacing the ALS03 that were shipped by accident free of charge with the s03 chip.

I'll let the dsp93dev group comment on the 7438 chip and its possible relations to a timing problem.

Sorry you had to go out and purchase S03 chips, we have been replacing those free from the office when they have been reported to us.

Cheers - Greg

According to Torfinn Holand:

>  
> As my kit was delivered with a 74ALS03, not the required 74S03, it has taken me  
> some time to get my DSP-93 ready for testing. Two days ago I finally got hold  
> of a couple of Texas Instrument 74S03 (at almost 4 US\$ each). After filling the  
> last empty socket (U115) and powering the system it took less than half a  
> minute  
> before the heatstroke hit the DSP-93! It was not difficult to localize the  
> problem  
> to the newly installed IC. I could keep test 4 (TESTLEDS) running forever by  
> keeping U115 cold, but the program was running bananas as soon as the cooling  
> process was halted. In monitor mode, running the processor at 20 MHz,  
> everything  
> was working OK. Installing another 74S03 did not solve the problem. I  
> checked the  
> power supply (4.96 V measured on pin 14) as well as the solder connections  
> which  
> all looked perfect.  
>  
> According to my TTL data book the 7438 should be equivalent to the 7403. At  
> work  
> I found a Signetics 74F38 which I installed yesterday. Since then test 4 has  
> been  
> running continously for more than 15 hours without failure, with the boards  
> installed  
> in the enclosure, placed in a narrow shelf in the shack with limited air  
> circulation  
> around the box. I will keep on running the test for another 12 hours before  
> continuing  
> with the other tests.  
>  
> According to the data book the F38 is marginally faster than the S03. 2-3  
> nanoseconds  
> seems to be the difference between success and failure!  
>  
> Regards  
>  
> Torfinn (la7sp@amsat.org)

---

### 193. Re: [DSP-93:1402] Re: Can I order a DSP-93?

From: n7ryw@teleport.com (William Roth)  
Date: Wed, 16 Aug 1995 11:26:31 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508161825.LAA15391@desiree.teleport.com>  
Rendered body type: text/plain

In reference to the voice mail system, Greg said,  
>Why Strange ?

Because there is no mention of how to get hold of a real person! The voice mails I have called in the past all have a selection to connect to someone, or better yet, they wait until there is no answer for a number of rings before they pick up. Your system asks for a name, which makes me think I am leaving a message and nobody is going to answer during this call.

If you really want to make sales of these units commercially, it would help a lot if the phone system was more clear about what is being done. Look at it from the viewpoint of someone who has never called before, and you will see what I mean. It really leads one to believe that there is never anyone in the office! Probably not the impression you want to give to an OEM.

I did get Dorothy, and the unit is on order. Although they were not in stock as I was told, the wait will be only a week or so. I don't normally backorder items, but a week is a whole lot better than the three months I was told to wait when I first inquired a year ago.

I do plan on doing something better for the Power Supply. I detest wall transformers, and two 5 volt regulators with resistors is a bit of a kludge, especially if a TNC is added internally. So I will build a proper supply with a 5 amp VR IC. That should handle THAT problem!

TTYL

>From Bill, n7ryw@teleport.com

Amsat NA Life Member #2109

---

## 194. Re: "Cool Units" ?

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 16 Aug 1995 13:29:20 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199508161829.NAA26439@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

Yes - I would also. The reports from people reporting a possible 'heat stroke' which really sounds like a timing problem, now only represent 3%-4% of the units shipped.

I've been talking to Ron and Bob about this and we are going to try to have to gather more data and try to find a unit that has replicable failures you help track it down for those few that need 365 a day reliable operations.

The feeling is that we probably have a prt in the few units that are a little out of spec and therefore is causing the problem. Maybe it is the S03 that Holdan has pointed out...maybe it is the U210....I can't say we have enough closure on this yet to point to anything specific. Let's just all keep working and I am sure we will find out what the problem might be.

Cheers - Greg

According to Mark L. Hammond:

>

> Just for the record, would builders from the most recent kit shipment who  
> have successfully built and tested their DSP-93 units without seeing  
> "heatstroke" symptoms please speak up, too? It would be good to know who  
> has a "cool unit".

>

> Albeit a slightly different board and components from a different shipment,  
> my beta unit has been on 24 hrs a day/7 days a week since it was assembled  
> and final component values agreed upon around 7/94. In the box, regulators  
> running "hot", mostly running 9600 baud FSK modems. I track K0-23 and K0-25  
> daily using Wisp, and load a modem into the DSP-93 just before each pass.

>

> Pretty good track record, if you ask me! I would definitely call my unit  
> "cool" ;-)

>

>

>

> Mark L. Hammond [KC4EBR]

>

>

---

## 195. Pk232 Connections

From: Carol Byers <crlbyers@garlic.com>  
Date: Wed, 16 Aug 1995 11:36:07 -0700 (PDT)  
To: Howard Sodja <w6shp@amsat.org>  
Cc: hardware dsp-93 <dsp-93@tapr.org>  
Message-ID: <Pine.A32.3.91.950815161314.22980A-100000@garlic.com>  
Rendered body type: text/plain

Hi Howard,

Could you, anyone, tell me how you connected the DSP-93 to the TAPR Modem  
Disconnect PCB Header in your PK-232. My header is jumpered for the  
"old" FO-12 G3RUH PSK Modem:  
Jumpered pins 5 to 6, 13 to 14, and 19 to 20.

Beleive it should be:

Jumper Pins: 5 to 6, and 13 to 14



Then connect:

DCD(NOT) to pin 1, PTT(NOT) to Pin 5, GND to 15, RXD to 17, and  
TXD to 19

IS THAT RIGHT??

Thanks for reading this msg.

Carol, W9HGI

---

## 196. New PSK

From: dmedley@indirect.com (David Medley)  
Date: Wed, 16 Aug 1995 14:27:11 -0700  
To: DSP-93@tapr.org  
Message-ID: <199508162127.OAA14980@bob.indirect.com>  
Rendered body type: text/plain

Frank I have run both the C and D versions of PSK93X2 without any problem. This morning was a good test time in that LUSAT is still very weak. The C version seemed to do a little better but that is a very subjective observation because signals were very unsteady. PACSAT was very loud and it was impossible to tell any difference between the two modems. The performance on PACSAT was superior to anything I have seen in a long while. I will continue using them daily. The only thing I have noticed is it seems to send very long packets on the uplink. This results in multiple responses from the satellite. Is this something the software is doing or is there a wrong parameter setting in the TNC?

On U0-11. Did we ever do anything about a modem for this one. Remember the polarity of the ASCII is the reverse to the usual 1200 baud stuff.  
73 de Dave KI6QE

---

## 197. U093

From: dmedley@indirect.com (David Medley)  
Date: Wed, 16 Aug 1995 14:32:36 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508162132.OAA15047@bob.indirect.com>  
Rendered body type: text/plain

Frank please ignore my question re U0-11. I just found U093 modem.  
de Dave KI6QE

---

## 198. Adaptive TESTPORT

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 16 Aug 1995 17:32:03 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac5820c0e81f@[204.181.160.66]>  
Rendered body type: text/plain

I have uploaded an adaptive version of TESTPORT to ftp.tapr.org.

ftp://ftp.tapr.org/tapr/dsp93/software/TESTPORT.ASM  
ftp://ftp.tapr.org/tapr/dsp93/software/TESTPORT.OBJ

This program tests the port initialization straps and sets the active levels of UP, DN and PTT accordingly.

PLEASE report any problems with this code to me.

USE OF THIS PROGRAM \_\_BEFORE\_\_ USING ANY OF THE ADAPTIVE MODEMS IS ABSOLUTELY NECESSARY. INCORRECT SETTINGS OF THE INITIALIZATION STRAPPING COULD DAMAGE YOUR EQUIPMENT. TEST THE SETTINGS WITH THIS PROGRAM, DISCONNECTED FROM YOUR EQUIPMENT, BEFORE CONNECTING THE DSP-93 TO YOUR RADIO.

```
; TESTPORT
; This routine tests the Push to Talk (PTT) and Frequency Up
; (FU) and Frequency Down (FD) lines of Radio Ports 1 and 2.
; The code tests the port initialization jumpers and the
; active polarity of each line is determined.
;
; Each control line of each port
; is toggled active for approximately 1 second, with a
; corresponding front panel light. The code repeats until the
; CPU is manually reset or an 'r' is sent to the serial port.
;
```



Message-ID: <Pine.OSF.3.91.950817084325.25177A-100000@carbon.cudenver.edu>  
Rendered body type: text/plain

My MFJ1274 manual indicates a maximum setting of 9600. I seem to recall reading that it can be modified for 19.2.

Can someone please tell me what I need to do to get it at 19.2?

Thanks.

Larry, W0EIE

---

## 201. Re: [DSP-93:1425] MFJ1274 at 19.2k

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 17 Aug 1995 10:40:21 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac5912d8c898@[204.96.0.76]>  
Rendered body type: text/plain

>My MFJ1274 manual indicates a maximum setting of 9600. I seem  
>to recall reading that it can be modified for 19.2.  
>  
>Can someone please tell me what I need to do to get it at 19.2?  
>  
>Thanks.  
>  
>Larry, W0EIE

The instructions are in "Appendix" in the back of the "Fast-Start" manual that came with mine. It's two pages. If no one has it in ASCII already, let me know and I could FAX it to you.

Remember, we are talking about the serial, not the radio, port.

Ron W5RKN

also:  
rparsons@bga.com

---

## 202. Re: [DSP-93:1426] Re: MFJ1274 at 19.2k

From: "Lawrence F. Johnston" <ljohnsto@carbon.cudenver.edu>  
Date: Thu, 17 Aug 1995 11:30:48 -0600 (MDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.OSF.3.91.950817112908.22377A-100000@carbon.cudenver.edu>  
Rendered body type: text/plain

My 1274 is about 6 years old, and I don't see anything like a "Fast Start" manual.

I would appreciate a copy of the instructions.

My fax is (303) 451-7346.

Larry, W0EIE

---

## 203. Re: [DSP-93:1420] Pk232 Connections

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 17 Aug 1995 18:21:51 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac597bd64906@[204.96.0.131]>  
Rendered body type: text/plain

Carol,

>Could you, anyone, tell me how you connected the DSP-93 to the TAPR Modem  
>Disconnect PCB Header in your PK-232.

When you get your PK-232 up and running with the DSP-93, could you write it up in the format in the Build Updates and send it to me, please.

Ron W5RKN

also:  
rparsons@bga.com

---

## 204. Re: [DSP-93:1421] New PSK

From: fperkins@onramp.net  
Date: Thu, 17 Aug 1995 19:23:47 -0500  
To: dsp-93@tapr.org  
Message-ID: <199508180023.TAA03242@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Dave,

I think I'm innocent this time. I get the "long transmits" occasionally and I understand this is a TNC thing with earlier versions of TNC-2 code when in the KISS mode (Wisp, PB/PG, etc).

Try asking Greg or Ron about this. I seem to remember this being discussed about 6 months ago.

73 Frank WB5IPM

---

## 205. dspload for Linux

From: "Jim Lynch" <k4gvo@america.net>  
Date: Thu, 17 Aug 1995 20:39:07 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508180051.AAA17029@america.net>  
Rendered body type: text/plain

Ok, Guys,

I finally broke down and did something for this group, I hope. I ported dspload to Linux. Someone else grab it from atll.america.net /pub/users/k4gvo/dsplinux.tar. and see if it works for them.

Included is the source, dspload.c, a sample .cfg file and an executable binary. I compiled it via:  
make dspload.

Be sure to edit the .cfg file and set the port to the correct com port. My dsp-93 is hooked to COM1 which is /dev/ttyS0. I'm running a Debian 0.93 release. I think the com ports are sometimes different for different distributions, so if it doesn't work for you, be sure you've got the right com port. Also be sure you aren't running any other comm software. This version doesn't check or set any locks, so CAVEAT EMPTOR as usual. Did I spell that right? My latin was way back there. Shortly after Rome fell.

Please let me know how it works. I am going to be out of town all next week, so if you don't get a response next week, I'll be back. (Arnie sure made that one famous. Doesn't have the same meaning as it used to.)

Enjoy, I hope it works.

73,

Jim.

|             |                   |             |
|-------------|-------------------|-------------|
| Jim Lynch   | Fayetteville, GA  | K4GVO       |
| '86 GL1200I | k4gvo@america.net | 44.36.34.20 |

---

## 206. Re: [DSP-93:1429] Re: New PSK

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 17 Aug 1995 20:13:52 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac5998980a5a@[204.96.0.132]>  
Rendered body type: text/plain

>Hi Dave,

>

>I think I'm innocent this time. I get the "long transmits" occasionally  
>and I understand this is a TNC thing with earlier versions of TNC-2 code  
>when in the KISS mode (Wisp, PB/PG, etc).

>

>Try asking Greg or Ron about this. I seem to remember this being discussed  
>about 6 months ago.

>

>73 Frank WB5IPM

It is possible you are seeing a bug that was in the KISS code for some versions of the TAPR TNC-2 EPROM (1.1.8 I believe has the bug as well as others that are derived from that code).

If, after the TNC is put into KISS mode, and no data is received for three minutes, the TNC reverts to half duplex. Then the TNC will "queue" transmit

requests until DCD drops (e.g., a fade). Then all the queued commands will "avalanche" at once.

You can see if your TNC has this problem by putting the TNC in KISS mode, Full duplex, no signal. Wait three minutes and see if the STA and CON LEDs flash. If so, you have the bug. The TAPR 1.1.9 code is free of this bug.

Ron W5RKN

also:  
rparsons@bga.com

---

## 207. Re: [DSP-93:1431] Re: New PSK

From: Howard Goldstein <hg@penny.n2wx.ampr.org>  
Date: Thu, 17 Aug 1995 22:06:49 -0400 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.LNX.3.91.950817220249.254A-100000@n2wx.ampr.org>  
Rendered body type: text/plain

On Thu, 17 Aug 1995, Ronald G. Parsons wrote:

> If, after the TNC is put into KISS mode, and no data is received for three  
> minutes, the TNC reverts to half duplex. Then the TNC will "queue" transmit  
> requests until DCD drops (e.g., a fade). Then all the queued commands will  
> "avalanche" at once.  
>  
> You can see if your TNC has this problem by putting the TNC in KISS mode,  
> Full duplex, no signal. Wait three minutes and see if the STA and CON LEDs  
> flash. If so, you have the bug. The TAPR 1.1.9 code is free of this bug.  
>  
>

For those who might be interested, the MFJ code will fail under this scenario because it continues to host the code that resets after 3 minutes. This operation is intentional (it was intended as a work around to the devillish kiss/crash bug).

In the MFJ code the feature is disabled by sending

```
param ax0 253 (in Phil's NET code)
 or
0xc0 0xfd 0xc0 (in hex)
```

--  
Howard Goldstein  
N2WX

hg@n2wx.ampr.org  
<http://www.tapr.org/~n2wx/>

---

## 208. Re: [DSP-93:1428] Re: Pk232 Connections

From: Carol Byers <crlbyers@garlic.com>  
Date: Thu, 17 Aug 1995 20:47:59 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950817204639.26800A-100000@garlic.com>  
Rendered body type: text/plain

Hi Ron, Yes I will write it up...Have been busy annd little time until now...

Carol, W9HGI

On Thu, 17 Aug 1995, Ronald G. Parsons wrote:

> Carol,  
>  
> >Could you, anyone, tell me how you connected the DSP-93 to the TAPR Modem  
> >Disconnect PCB Header in your PK-232.  
>  
> When you get your PK-232 up and running with the DSP-93, could you write it  
> up in the format in the Build Updates and send it to me, please.  
>  
>  
> Ron W5RKN  
>  
> also:  
> rparsons@bga.com  
>  
>

>

## 209. Re: [DSP-93:1417] Re: Yet another heatstroke

From: torfinn@spacetec.no (Torfinn Holand)  
Date: Fri, 18 Aug 1995 10:00:34 +0200  
To: dsp-93@tapr.org  
Message-ID: <9508180745.AA28303@jupiter.spacetec.no>  
Rendered body type: text/plain

Hello Greg,

>

>I'll have Dorothy send you an S03 chip from the batch we are using and see if  
>it will work or not. There are two different S03 chips that were shipped in  
>this last build. One set should have been from TI and ones that have been  
>shipped to replace the ALS03 chips were an NTE part. I'll have to dig for a  
>TI part.  
>

As my DSP-93 now works perfectly, I don't need the S03 to complete the kit.  
However, if I can help solve a potential problem related to the S03 chips, I  
will try the chip in my unit as soon as it arrives, and report back.

>I would be interested in finding out which S03 chips people have that are  
>having problems, in case this is indeed something common among that group  
>or something that has just effected Torfinn.  
>  
>Dorothy will get them out today. We have been replacing the ALS03 that were  
>shipped by accident free of charge with the s03 chip.  
>  
>I'll let the dsp93dev group comment on the 7438 chip and its possible  
>relations to a timing problem.  
>  
>Sorry you had to go out and purchase S03 chips, we have been replacing those  
>free from the office when they have been reported to us.  
>

Well, I did it both to save time getting my kit up and running, as well as  
to save TAPR the trouble and postage shipping a single chip half way around  
the world.

Torfinn (la7sp@amsat.org)

## 210. PacComm TNC for DSP-93

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Fri, 18 Aug 95 08:44:33 UTC  
To: dsp-93@tapr.org  
Message-ID: <3762@paccomm.com>  
Rendered body type: text/plain

Progress report on the DSP-93 TNC which was announced earlier.

Circuit board layout commenced today, top priority.

Circuit features (some are different than originally announced)

Uses Z-181 CPU vs standard Z-80 and SI0.

1. Saves space
2. Allows software selection of terminal and HDLC baud rates. Since no switches are needed, less holes to cut in DSP-93 panel.
3. Contains parallel I/O. (future use?)

Mounts with longer screws using same bolt holes as DSP-93 boards.  
Screws and spacers provided.

Existing DB-25 ribbon cable which connects to HDLC port attaches to  
the TNC serial port and the DB-25 becomes a standard RS-232 port.

Long pins on TNC plug directly into DSP-93 HDLC connector.

Standard TNC LEDs are on front of board. You can bend them up if you  
don't want to drill the front panel. In that case, the TNC installs  
with NO metal work.

CPU chip has second serial port which could be adapted to load the  
DSP from the PC. This is not implemented... (send ideas fast!)

CPU operates at 10 MHz (9.2 actually) so can easily handle 38.4kb.

Board draws only 40-50 mA.

I'll have drawings and (cross fingers) sample boards to show at the Long Beach (Queen Mary) on Labor day, and very likely have units to deliver at the DCC.

Anyone with any more 'neat ideas' should submit them within 24 hours. It isn't too late to make a few improvements to the design, but it will be off to the board house by the 23rd (for 1 week rush boards) so all changes need to be put in by us no later than Monday.

If someone can describe how the DSP load from the PC function works and where the connections need to be made, and at what voltage levels, we can probably incorporate that feature.

Oh, as should be clear, the design is not any longer TNC-2 compatible. Thus you will need to run PacComm code, but we have been careful to retain nearly all the TAPR features so you shouldn't really see the difference. This will enable us to make the necessary changes to support the DSP load function if that comes about.

Some portion of the components are surface mount, so we don't plan to offer a kit version.

Last minute suggestions invited.

73,  
Gwyn

-----  
Gwyn Reedy, WIBEL      gwyn@paccomm.com      WIBEL@amsat.org

+(813) 874-2980      Fax: +(813) 872-8696      BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

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## 211. Falling through the cracks

From: deh6@po.CWRU.Edu (Donald E. Haselwood)  
Date: Fri, 18 Aug 1995 11:03:27 -0400  
To: dsp-93@tapr.org  
Message-ID: <199508181503.LAA15603@kanga.INS.CWRU.Edu>  
Rendered body type: text/plain

I noticed I hadn't been getting any dsp-93 mail since 7/11/95. I sent a note to e-mail@tapr.org, but no response. I then re-subscribed and now see some activity. I was wondering:

a) Is there a downloadable file of the dsp-93 activity for July & Aug?

b) Is the list "purged" periodically so that one has to re-subscribe?

Don, K4JPJ

---

## 212. Re: [DSP-93:1409] "Cool Units" ?

From: RoberArc@InterLink.NET (Robert Archambault m.d.)  
Date: Fri, 18 Aug 1995 11:10:29 -0400  
To: dsp-93@tapr.org  
Message-ID: <9508181510.AA26694@InterLink.NET>  
Rendered body type: text/plain

OK, I have received my DSP-93 kit last week. It is now running fine and "cool" at 20 MHz clock rate (with 74S03 chip). No errors or missing parts were found in the kit, which happens to be the first time in over 20 kits I've built. The unit has been left "on" for over 24 hours.

Building the kit was "cool" too and took me 4 hours with no fatigue... The trick?? Try assembling the boards under a binocular microscope at low power magnification (below x10)!

Now I can hardly wait to finish assembling the satellite antennas. Best luck to all kit builders.

73, Robert.  
Robert Archambault md.  
356 De Champs,  
Boucherville, Quebec.  
J4B 6N7  
tel.(514)-641-3141

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### 213. Re: [DSP-93:1431] Re: New PSK

From: dmedley@indirect.com (David Medley)  
Date: Fri, 18 Aug 1995 08:22:55 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508181522.IAA29536@bob.indirect.com>  
Rendered body type: text/plain

Ron Frank

Aha yes indeed I have noticed the flashing lights so will change the EPROM.  
I must have missed the discussion along the line somewhere.  
Thanks Ron.

>You can see if your TNC has this problem by putting the TNC in KISS mode,  
>Full duplex, no signal. Wait three minutes and see if the STA and CON LEDs  
>flash. If so, you have the bug. The TAPR 1.1.9 code is free of this bug.  
>  
>  
>  
>  
>

---

### 214. Re: [DSP-93:1436] Falling through the cracks

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 18 Aug 1995 11:00:01 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac5a69090394@[204.181.160.68]>  
Rendered body type: text/plain

>I noticed I hadn't been getting any dsp-93 mail since 7/11/95. I  
>sent a note to e-mail@tapr.org, but no response. I  
>then re-subscribed and now see some activity. I was wondering:  
>  
>a) Is there a downloadable file of the dsp-93 activity for July &  
>Aug?

See:  
[ftp://ftp.tapr.org/tapr/dsp93/mail\\_archive/jul.95.Z](ftp://ftp.tapr.org/tapr/dsp93/mail_archive/jul.95.Z)  
[ftp://ftp.tapr.org/tapr/dsp93/mail\\_archive/aug.95](ftp://ftp.tapr.org/tapr/dsp93/mail_archive/aug.95)

>b) Is the list "purged" periodically so that one has to re-  
>subscribe?  
>  
>Don, K4JPJ

Not that I know of. You were just lucky, I guess :-)

Ron W5RKN

also:  
[rparsons@bga.com](mailto:rparsons@bga.com)

---

### 215. unsubscribe

From: crohrer@VNET.IBM.COM  
Date: Fri, 18 Aug 95 11:20:06 CDT  
To: dsp-93@TAPR.ORG  
Message-ID: <199508181620.LAA07733@sys1.tapr.org>  
Rendered body type: text/plain  
[Empty message body]

---

### 216. Re: [DSP-93:1425] MFJ1274 at 19.2k

From: Roy Welch <rdw@crl.com>  
Date: Fri, 18 Aug 1995 10:16:59 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.950818101637.18076A-100000@crl6.crl.com>  
Rendered body type: text/plain

Have you had a reply to this yet?  
73, Roy

On Thu, 17 Aug 1995, Lawrence F. Johnston wrote:

> My MFJ1274 manual indicates a maximum setting of 9600. I seem  
> to recall reading that it can be modified for 19.2.  
>  
> Can someone please tell me what I need to do to get it at 19.2?



>  
> Thanks.  
>  
> Larry, W0EIE  
>  
>

---

## 217. Hot HF interface ?'s

From: Bob Smith <bsmith@msn.com>  
Date: Fri, 18 Aug 95 22:02:16 UT  
To: "'dsp-93'" <dsp-93@tapr.org>  
Message-ID: <UPMAIL01.199508182204020765@msn.com>  
Rendered body type: text/plain

OK I think I'm stupid... Trying to use the HOTHF modem to get ARRL RTTY, where is the output going. Have the same setup as terr 9.6K packet that works fine but when I have a sig tuned using the any of the HF modems I get the lights set right but no output to screen. I do have the TNC still set for 9600 packet.

What have I missed? Thanks and advance and 73's

Bob  
Smith

---

## 218. Re: [DSP-93:1442] Hot HF interface ?'s

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 18 Aug 1995 18:09:40 -0500  
To: dsp-93@tapr.org  
Cc: Bob Smith <bsmith@msn.com>  
Message-ID: <v02120d00ac5acdf3b98c@[204.181.160.68]>  
Rendered body type: text/plain

>OK I think I'm stupid... Trying to use the HOTHF modem to get ARRL RTTY,  
>where is the output going. Have the same setup as terr 9.6K packet that  
>works fine but when I have a sig tuned using the any of the HF modems I get  
>the lights set right but no output to screen. I do have the TNC still set  
>for 9600 packet.

>  
>What have I missed? Thanks and advance and 73's  
>  
>Bob  
>Smith

I haven't used these modems but I believe thay do not use the TNC. The output is on the serial port. RTFM.

Ron W5RKN

also:  
rparsons@bga.com

---

## 219. Re: [DSP-93:1442] Hot HF interface ?'s

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Fri, 18 Aug 1995 23:26:49 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508182349.TAA00840@camel.campbell.edu>  
Rendered body type: text/plain

Hi Bob,

You don't even NEED a "real" TNC in order for hot\_93hf to work!

Data comes from the same COM port used to load the DSP-93. You first load the modem, and then you can print from the same port on the DSP-93.

I suggest using something like D93WE under Windows, for example. Then you can do it all at once...

Does that help clear it up?

At 17:11 8/18/95 -0500, you wrote:

>OK I think I'm stupid... Trying to use the HOTHF modem to get ARRL RTTY,  
>where is the output going. Have the same setup as terr 9.6K packet that  
>works fine but when I have a sig tuned using the any of the HF modems I get  
>the lights set right but no output to screen. I do have the TNC still set  
>for 9600 packet.  
>

>What have I missed? Thanks and advance and 73's  
>  
>Bob  
>Smith  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 220. Re:PacComm TNC for DSP-93

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Sat, 19 Aug 1995 01:02:16 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508190124.VAA01022@camel.campbell.edu>  
Rendered body type: text/plain

At 08:14 8/18/95 -0500, you wrote:

>Progress report on the DSP-93 TNC which was announced earlier.  
// Lots deleted

>Oh, as should be clear, the design is not any longer TNC-2 compatible.  
>Thus you will need to run PacComm code, but we have been careful to  
>retain nearly all the TAPR features so you shouldn't really see the  
>difference. This will enable us to make the necessary changes to  
>support the DSP load function if that comes about.

Gwyn,

Let me make sure I understand this...this does NOT mean that the commands  
entered as a user will be dramatically different, does it?

In other words, I would like to use Wisp with the new TNC/DSP-93 combo, and  
would assume that I could still tell the Wisp setup that the TNC is a  
"TNC-2"? Otherwise, the author will have to modify the program to include  
the commands for this new tnc.

I guess I need to know what you mean by "you will need to run PacComm code"  
above...sorry to sound so ignorant, but I am ;-)

>Some portion of the components are surface mount, so we don't plan to  
>offer a kit version.

>  
>Last minute suggestions invited.

>  
>73,  
>Gwyn

>  
-----  
>Gwyn Reedy, W1BEL            gwyn@paccomm.com            W1BEL@amsat.org  
>  
>+(813) 874-2980            Fax:+(813) 872-8696            BBS: +(813) 874-3078 (V.34)  
>  
>PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618  
>  
>

Mark L. Hammond [KC4EBR]

---

## 221. Re: [DSP-93:1435] PacComm TNC for DSP-93

From: n7ryw@teleport.com (William Roth)  
Date: Fri, 18 Aug 1995 20:09:40 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508190308.UAA28126@desiree.teleport.com>  
Rendered body type: text/plain

>Oh, as should be clear, the design is not any longer TNC-2 compatible.  
>Thus you will need to run PacComm code

I infer that you mean that the TNC needs its own code (eprom) and that TNC-2  
eproms won't work. Considering that the DSP-93 would need some extensions to  
the TNC-2 command set, this is fine, as long as the TNC-2 set is maintained.  
In other words, that your code is an \*extension\* of the set. If you mean  
that the TNC-2 command set is not supported, I hope that you will rethink  
the decision.

>Some portion of the components are surface mount, so we don't plan to  
>offer a kit version.

I am quite adept at assembling SMD. In fact, I like it better than bending leads on oversized components. So maybe a kit is not so bad after all?!

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

## 222. Re: [DSP-93:1443] Re: Hot HF interface ?'s

From: ljs@west.net (L.J.Shepherd)  
Date: Fri, 18 Aug 1995 22:07:51 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508190509.WAA13309@acme.sb.west.net>  
Rendered body type: text/plain

Ron is correct. No TNC is used with the HOT HF modem. Radio connects to DSP-93 Port 1, Computer connects to the DSP-93 Serial Port.

Good luck, Jim K6OYY

>>OK I think I'm stupid... Trying to use the HOTHF modem to get ARRL RTTY,  
>>where is the output going. Have the same setup as terr 9.6K packet that  
>>works fine but when I have a sig tuned using the any of the HF modems I get  
>>the lights set right but no output to screen. I do have the TNC still set  
>>for 9600 packet.  
>>  
>>What have I missed? Thanks and advance and 73's  
>>  
>>Bob  
>>Smith  
>  
>I haven't used these modems but I believe thay do not use the TNC. The  
>output is on the serial port. RTFM.  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>  
>  
>

---

## 223. Re: [DSP-93:1447] Re: Hot HF interface ?'s

From: "Jim Lynch" <k4gvo@america.net>  
Date: Sat, 19 Aug 1995 06:04:50 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508191017.KAA09491@america.net>  
Rendered body type: text/plain

> Date: Sat, 19 Aug 1995 00:15:26 -0500  
> Reply-to: dsp-93@tapr.org  
> From: ljs@west.net (L.J.Shepherd)  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:1447] Re: Hot HF interface ?'s

> Ron is correct. No TNC is used with the HOT HF modem. Radio connects to  
> DSP-93 Port 1, Computer connects to the DSP-93 Serial Port.  
> Good luck, Jim K6OYY  
>  
>  
> >>OK I think I'm stupid... Trying to use the HOTHF modem to get ARRL RTTY,  
> >>where is the output going. Have the same setup as terr 9.6K packet that

OK, where is HOTHF? I see it in the software.list file on tapr, but I can't find it in the software, upload, util or anyother directory under DSP93 on tapr.

Help?

Thanks,  
Jim.  
Jim Lynch                      Fayetteville, GA                      K4GVO  
'86 GL1200I                      k4gvo@america.net                      44.36.34.20

---

## 224. Re: [DSP-93:1448] Re: Hot HF interface ?'s

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 19 Aug 1995 06:15:48 -0500  
To: dsp-93@tapr.org

Message-ID: <v02120d00ac5b7812b1e7@[204.96.0.41]>  
Rendered body type: text/plain

Jim,

>> >>OK I think I'm stupid... Trying to use the HOTHF modem to get ARRL RTTY,  
>> >>where is the output going. Have the same setup as terr 9.6K packet that  
>  
>OK, where is HOTHF? I see it in the software.list file on tapr, but I  
>can't find it in the software, upload, util or anyother directory  
>under DSP93 on tapr.  
>  
>Help?

It is hidden at ftp://ftp.tapr.org/tapr/dsp93/software/modem.zip

BAD name!

Ron W5RKN

also:  
rparsons@bga.com

---

## 225. Re: "Cool Units" ?

From: ab870@rgfn.epcc.Edu (Charlie B Wood)  
Date: Sat, 19 Aug 95 06:48:01 MDT  
To: dsp-93@tapr.org  
Message-ID: <9508191248.AA05094@rgfn.epcc.Edu>  
Rendered body type: text/plain

My DSP93 unit here has shown no signs of heatstroke. I have ran it at times over 12-15 hours using the hf packet and rtty programs. I also have left the testled program going overnight. My unit does get very hot...to the point that you can barely touch the heatsinks. The voltage balance check of the power supplies is OK (42mv-50mv).

Note: I got one of the kits with the 74als03 and I replaced it with a sub (74f00) after much troubleshooting. (It would not work in fast mode.) I have yet to replace the 74f00 with the 74s03 TAPR sent me. (Its been working great. Why risk it?)

Charlie wa5kyv  
ab870@rgfn.epcc.edu

--  
Charlie  
WA5KYV  
ab870@rgfn.epcc.edu  
-----

---

## 226. Clarification of TNC-2 Compatible

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Sat, 19 Aug 95 11:00:39 UTC  
To: dsp-93@tapr.org  
Message-ID: <3844@paccomm.com>  
Rendered body type: text/plain

There have been several responses to my posting about the PacComm TNC for the DSP-93 which said the unit will no longer be TNC-2 compatible.

Here are my definitions of some terms; you are free to hold your own.

TNC-2 CLONE = direct, exact copy of the TNC-2 board, i.e. PacComm TNC-200.  
(Also clones but not available any longer: TNC-2A, PK-80)

TNC-2 Compatible = unit which will run properly a TNC-2 EPROM. This means it must use the SIO chip addressed the same way as the TNC-2, have DIP switches (or jumpers) for baud rates etc. Units in this class include the PacComm TINY-2 and SPIRIT-2, MFJ 1270 and 1274. Note that some of the hardware features on these compatibles may not be supported by the TAPR EPROM, but the EPROM will work 100% as it was intended to do. The MFJ-1278 may also fall in that category.

PacComm units which are NOT TNC-2 Compatible include the TNC-220, TNC-320, PC-320, HandiPacket, PicoPacket. The principal reason for the non-compatibility is that these units use an SCC for the I/O rather than the SIO. Thus a TNC-2 EPROM will not come up and run because the initialization routines are

not correct.

PacComm code is derived from the TAPR code which we licensed. We have added SCC drivers and many other features, but have retained all but one or two of the TAPR commands, and those commands work exactly the same in nearly all cases. I'm sure there are a variety of minor differences, but nothing substantial. Therefore an operator using PacComm Code with a manual meant for the TAPR EPROM would find almost nothing that was not identical. He would just find more once he went outside the TNC-2 bounds.

The only practical meaning for TNC-2 compatible these days is whether the platform will run NET/ROM, TheNet, or ROSE. Those have tended to follow the TNC-2 format for universality, but that also is beginning to fade away as special versions of code are written (PK-96 TheNet for example).

PacComm code has been significantly rewritten from the TAPR source we got many years ago. There are untouched areas, but nearly all has been massaged and reorganized. We believe it runs faster and more reliably. All of this has been masked from the user by maintaining support of the TAPR command set.

Hope this answers the questions. I'm happy to answer more if you have them.

73,  
Gwyn

-----  
Gwyn Reedy, WIBEL      gwyn@paccomm.com      WIBEL@amsat.org

+ (813) 874-2980      Fax: + (813) 872-8696      BBS: + (813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

---

## 227. TNC-2 problem

From: dmedley@indirect.com (David Medley)  
Date: Sat, 19 Aug 1995 09:10:25 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508191610.JAA21610@bob.indirect.com>  
Rendered body type: text/plain

Ron thanks for the reminder about the bug in the latest firmware for the TNC-2. I downloaded from the FTP server the 1.1.8a files this morning and programmed a new EPROM and all is well. I did not notice any flashing lights or long packets today. I got a little charge out of watching the PB screen before when PACSAT would say:

OK KI6QE  
OK KI6QE  
OK KI6QE  
OK KI6QE

I could imagine the little man up there in A0-16 would like to say "dammit Man I heard you the first time!!!"

I have always wondered why TAPR TNC firmware always uses even parity and 7 bits whereas all commercial TNCs use no parity and 8 bits. Would be interested in your comment on this.

Another question do you or anybody know where I can find the latest TRAKBOX files for the firmware? I have searched the TAPR site but cannot find any.

My trakbox is acting up (see my message on then TAPR-BB) and

I made need to reload the EPROM.

73 de Dave KI6QE

---

## 228. Re: [DSP-93:1442] Hot HF interface ?'s

From: Mills@huey.udel.edu  
Date: Sat, 19 Aug 95 12:15:02 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9508191215.aa04178@huey.udel.edu>  
Rendered body type: text/plain

Bob,

Er, ah, you should read the first few paragraphs of the readme file included with the HF FSK modem distribution. You don't need a TNC with this modem, although you can use one if it is set to a mode compatible with the regenerator function of the modem. Assuming you have loaded the program and tuned in a signal, the decoded data should appear on the same screen used to load the program.

Dave

## 229. Re: [DSP-93:1448] Re: Hot HF interface ?'s

From: Mills@huey.udel.edu  
Date: Sat, 19 Aug 95 12:47:21 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9508191247.aa04276@huey.udel.edu>  
Rendered body type: text/plain

Jim,

I left the HF FSK modem in the upload directory at the TAPR site and in the pub/ntp directory on louie.udel.edu. While I haven't hunted through the latest TAPR distribution, I understood it was there. Be sure it is the latest version dated 5 July.

Dave

---

## 230. WA5VMS\_Htstrk

From: Bob Morgan <morganb@tenet.edu>  
Date: Sat, 19 Aug 1995 12:42:32 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508191742.MAA28444@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Re: WA5VMS DSP-93 thermal and 'heatstroke' experiences:

Some of this material may have hit the listserv once before, however I wasn't getting any mail from it for a day or so when I posted it and didn't see it bounce back to me. This is combined with new information also, apparently Joe has developed the heatstroke syndrome, and managed to get a scope into the clock circuits when it acted up.

-----

Joe called on the phone a little later on and reported that he had tried radio port 2, and that when he installed an option jumper for that channel from the +5v pullup resistor to pin 4 of the DB-25 (this sets port 2 U/D option) that the DC voltage on that strap fell to 0v, that is it must have been shorted. I suppose that since the source had a pullup resistor in series that it didn't hurt anything.

I told him of my experiences with thermal problems, and asked him if he would take some unregulated voltage measurements and report them, so here they are. I got this message from him over TexNet the next morning. Looks like he is running even hotter than I was.

-----from Joe WA5VMS, forwarded thru WB5AOH -----

0184 \* WB5AOH0 WA5VMSB MUSK0GE 950814/0607 DSP93  
Bob, I measured the following voltages:  
DSP Engine 10.72 V to the 7805  
Audio I/O 11.22 V to the 7805  
Audio I/O 13.87 V to the 7905

Also found a problem in the TNC interface cable, the one from the Audio I/O TNC connector to the DB-25 on the back panel. Don't remember what the DB25 pin #'s are I know one is 4 and I think the other is 16, these translate to 5 & 6 on the TNC header, are shorted together. May be more. My TNC behaved a little strange. From what I can gather, the problem may be in the DB25 plug where the ribbon cable is crimped. More later.  
73, Joe

0193 \* P WB5AOH0 WA5VMSB MUSK0GE 950814/2012 Cable  
Bob, I have verified that the problem is within the cable and not a solder bridge. Things are OK when I jumper across the TNC header. I have verified with a DVM that I have a short. I am assuming a bad crimp job. Will check that here in a few minutes. Having PTT problems too. Suspect the cable. More later.  
73, Joe

0195 \* P WB5AOH0 WA5VMSB MUSK0GE 950814/2225 Ribbon cable  
Bob, the problem was in the DB25 connector on the ribbon cable. The cable supplied with my kit had some wires shorted due to incorrect placement of the cable in the connector. The ribbon cable is a tight squeeze for the DB25 pin spacing. If you examine my cable under a jeweler's magnifier, you can see that one side of the cable, the insulation is flat all the way across. On the other side, it is slightly rounded. If the flat side is placed in the "notch" of the piercing pins on the connector(as mine was), you are guaranteed some short circuits. If the cable is turned over so the rounded side of the cable is in the notch, everything works OK. I have had enough fun for tonight.

73, Joe

-----Bob's comments:

RE: DB-25 connector troubles

I think that Joe may be on to something here with the ribbon cable connector on the DSP93 back panel. I looked at mine and it also is inserted upside down in the connector. While I have not pinpointed the cause for sure, I did have an intermittent P1 PTT input for awhile, and I tested/inspected my own external TNC/DSP cable looking for it. I found nothing, and the problem went away. Wondering if it might turn up again?

I managed to get 3 of the 4 new PKTAD/FSKAD.OBJ programs stored on the NE OK TexNet message server for Joe before propagation fell out, so I am anticipating a report from Joe sometime in the next day or so.

---- Later on, the heatstroke phenomenon pops up. Joe's comments follow----

0204 \* P WB5AOH0 WA5VMSB MUSKOGEE 950816/2151 DSP Problems  
Have a combination of problems. Intermittent PTT. PTT to 74ALS541 pin 3 OK. I can load 1200 baud AFSK progs and issue a PTT. I get one blink of the PTT LED on the DSP and that's it. Same problem on both ports. Sometimes it will work OK for a few minutes. DSP also crashes. After it has been on for 10-15 min, loading the 1200 baud AFSK prog will crash unit. Prog loads OK. After processor speed switches to 20 meg, I get a reset. 9600 baud progs will load. After loading, if I try to load another prog, I get a serial error. When unit is behaving, PTT works OK and I have TX output from the modem. When it goes crazy, it stays that way. Powering unit down will help the crash problem. Let it cool for a while and it will work. PTT problem does not seem to follow any pattern. I have had a scope on the 5 volt lines on both boards. All voltages seem to be there and are clean. Have not checked the DSP engine but I have checked the analog board to be sure I have +5 and GND connections to all chips when it is misbehaving.  
Any thoughts?  
73, Joe

----- Bob's comments

I told him of a little of the heatstroke problem and background and asked him to poke around in the clock circuits looking for problems.

My notes later on 8/19 during a telephone call from joe:

Cooling down 74S03 with freeze spray restores operation. A shot of freeze spray makes it act like the whole unit was turned on cold. Amplitude of osc output is about 2-2.5 v p-p instead of 5v. Clock oscillator output swings from 1.2v to 2.7v. 10Mc clk swings from 4.2 to -0.6 on pin 9 of u114. During crashed conditions pin 9 of u114 dies (flatlines) instead of 10 meg clock. Logic level is low at that point. 40 meg clock becomes ragged. Intermediate point at pin 5 of u112 is high and flatlined. U114 has been replaced with a 54S112 because it was handy, and no effect. Removing the 74S112 didn't raise the 40 mc clock amplitude. Removing the 74S03 (no load on the osc) didn't improve the ampl either. Verified that the osc has 5v available to it, and its ground is intact also.

Joe can apparently make the DSP run indefinitely by cooling down the 74S03. If it crashes, he can cool it down, hit reset, reload and run again, all without removing power. So far, all of this episode was done with the DSP out of its case for probe access, allowing some external cooling to take place.

Joe also reports that using a scope with a regular 10:1 probe, that touching the probe tip to the 40 Mc point sometimes loads the circuit enough to crash the DSP. That fact coupled with the apparently low drive (inability to pull the waveform all the way to ground) casts doubt on the drive capability of his oscillator can. I told him in the meantime to experiment with a 'pulldown' resistor at this point, and see whether it makes more voltage swing available and helps out, or just loads the circuit further.

Joe reported he has not had a chance to test any adaptive strapping programs. He has to get past the crashing problem first, and get enough spare time to tinker with it.

-----

Robert Morgan  
WB5AOH

## 231. More info about WA5VMS heatstroke

From: Bob Morgan <morganb@tenet.edu>  
Date: Sat, 19 Aug 1995 15:03:12 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508192003.PAA12058@Kay-Abernathy.tenet.edu>  
Rendered body type: text/plain

I took my unit, which as far as I know does not have the heatstroke phenonemon as such, although I did have one crash after several hours of elevated temp operation. Greg wanted to know which mfr 74S03 that Joe and I have. I have the TI. I will ask Joe the next time I catch him.

I took my unit out of the case and got the scope probe into its underside on the clock chain. The 40 Meg oscillator output of my unit was clean and swung from -0.5 to +4.5 v. The 20 and 10 meg points also swung almost rail to rail, and had a little overshoot and ringing.

Contrast that to what I reported that Joe saw. He saw a much elevated logic "0" voltage out of the oscillator. This problem persisted even though he unplugged both chips downstream of it. I would be more inclined to suspect a faulty oscillator that could deliver less than 50% of expected amplitude, than to suspect minor and marginal differences between various S03's or the temperature they were running at, when they are trying to handle a reduced amplitude squarewave input.

Anybody else look at any waveforms in this area?

73 de Bob

Robert B. Morgan  
Austin Texas  
morganb@tenet.edu

---

## 232. WA5VMS Heatstroke more info

From: Bob Morgan <morganb@tenet.edu>  
Date: Sat, 19 Aug 1995 21:30:42 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508200230.VAA30508@beall.tenet.edu>  
Rendered body type: text/plain

RE: WA5VMS DSP93 heatstroke phenomenon. by Bob, WB5A0H 8/19/95 pm.

Joe called back on the telephone again, and came up with the following additional info on the DSP clock osc and chain. To refresh the situation: Joe, WA5VMS, is the one with the "heatstroke", mine apparently is OK.

The markings on his osc can are:

50008-136 40.000000 MHz MT013F AD M-TRON 94-41-09

My unit's markings are identical. His unit swings half what mine swings. In addition to the scope, and to partially check the validity of the scope, he took an average reading of that point with a DVM, and read 2.0 v dc. I repeated it with my DVM and got 1.88 v dc. for whatever it is worth. Perhaps some folks having troubles, but not having access to a fast scope might be able to take and report this reading, and maybe some kind of a statistical correlation might develop. Open leads to a sampling DVM at 40 Meg is awfully sloppy. Anyhow I had a stable reading. Our moral to the story: Get a good scope. Incidentally, this is the first thing I ever worked on where I cranked the H Sweep selector all the way over as fast as it would go. (I have a Tektronix 453).

I also asked him Greg's question about the manufacturer of his 74S03. His is a NTE. I think he said that Mouser listed them as NewTone Electric or something like that, and he compared them to a substitution line of parts somewhat analogous to ECG. I am not familiar with them myself. Mine was a TI. Joe and I have had a running joke phrase between us for years, a sales slogan of "A few will do". or a line of a few hundred substitutes to replace a few thousand items on the market. Application dependant of course. Maybe they are OK, maybe not. I don't know.

So much for facts, now for the speculative part: Joe looked in the DigiKey catalog and found clock oscillators of two kinds: TTL and CMOS compatible outputs, and of course with different voltage swings. He and I have identically marked oscillators, right down to what looks like a



date code, and they have a drastic difference in output. Assume we have a CMOS output gate, and I really don't know for sure anyhow. They ought to swing about rail to rail. There is a FET switch to either rail. Assume that one or the other gets blown, then you might have a cruddy looking output that might only swing from some arbitrary midpoint to one or the other rails. That's the Best it could be expected to do. I contend that is what is happening, at least in his case. Also, assume that it possible for either gate to be blown, and the next guy with a problem might have a different looking waveform. It might even work better with the TTL-S downstream, and the problem might be harder to notice.

It could further confuse things if there is some other unrelated problem with similar symptoms that is running around.

Maybe we should be using a TTL component all along? I DON'T know what we really have anyhow.

Next, if we have to replace such a component: It is soldered into a multilayer board, and is going to be hard to remove. He says he thinks he can do it with his fancy repair station, but the next guy might not be so lucky. To begin with, if you got the thing out of there, but could not clear solder from the Vcc and Vdd holes, you would have a tough time. It might be preferable to dismantle the oscillator in place, and attach a socket to what is left in the board. Anyhow, a socket might be preferable the second time around, just in case there is a third time. He says there are 4 pin machined-contact sockets made just for clock oscillator cans. (I seem to remember some verbage in the manual to keep the leads short)? Anybody have any better ideas?

I will repeat my earlier gut feeling: if this is the typical situation of "heatstroke" we ought to be more concerned about a 2:1 difference in various clock oscillator output, than be concerned about minor differences in 74S03's, particularly if the voltage swing doesn't look like TTL signals.

73 de Bob

Robert B. Morgan  
WB5A0H  
Austin, Texas  
morganb@tenet.edu

---

## 233. Flux Cleaning

From: bandy@server.elysian.net (John Bandy)  
Date: Sun, 20 Aug 95 10:49 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0skCcl-0002CpC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: Flux Cleaning

Hello One and All,

Why does one do 'flux cleaning'? I do not remember doing this task in the old Heathkit days. What are the benefits?

73's  
John  
---

□ OLX 1.53 □ Behind a great person are many great common people

---

## 234. Re: [DSP-93:1458] Flux Cleaning

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 20 Aug 1995 11:43:04 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac5d163a000c@[204.181.160.92]>  
Rendered body type: text/plain

John,

Check [DSP-93:1237] Flux Removal, etc. Available in the August archive.

Ron

>To: dsp-93@tapr.org  
>Subject: Flux Cleaning  
>

>Hello One and All,  
>  
>Why does one do 'flux cleaning'? I do not remember doing this task in  
>the old Heathkit days. What are the benefits?  
>  
>73's  
>John  
>---  
> □ OLX 1.53 □ Behind a great person are many great common people  
>  
>  
  
Ron W5RKN  
  
also:  
rparsons@bga.com

---

## 235. Re: Pk232 Connections

From: Carol Byers <crlbyers@garlic.com>  
Date: Sun, 20 Aug 1995 10:18:52 -0700 (PDT)  
To: Howard Sodja <w6shp@amsat.org>  
Cc: hardware dsp-93 <dsp-93@tapr.org>  
Message-ID: <Pine.A32.3.91.950820100110.12320B-100000@garlic.com>  
Rendered body type: text/plain

Hi Howard,

Thank you for all your research. My problem may be software, as you say. Did not know about the fact that you needed to configure the PK-232 for satellite use. Have been using a PacCom NB-96 and their TNC on the satellites.

I think that the wiring is right, except possibly the clock, as you said ? On the MFJ-1270C there are 3 switches to set the radio Baud rate. May have to do the same thing with the PK-232 ??

I had the PK-232 running, some time ago, with the old G3RUH F0-12 modem and the PacCom PSK-1. Never changed the parameters from VHF and 1200 Baud. Will check it out for the FSK modems, and let you know.

Have go through the PK-232 and MFJ-1270C schematics, but have not been able to determine much yet as the MFJ-1270 schematic does not show the radio baud switches...will work getting an updated schematic.

Also, got an MFJ-1270C, and am in the process of interfacing it with the DSP-93...am going to finish my first goal of getting the DSP-93 on line and operational ! Then, I'm going to work on the PK-232 interface ... it really bugs me, and I won't quit until it works!!

Thanks again for all of your time and efforts. Will keep you informed.

Carol

---

## 236. DSP93 Operational

From: Carol Byers <crlbyers@garlic.com>  
Date: Sun, 20 Aug 1995 12:59:10 -0700 (PDT)  
To: Howard Sodja <w6shp@amsat.org>  
Cc: hardware dsp-93 <dsp-93@tapr.org>  
Message-ID: <Pine.A32.3.91.950820125358.22476A-100000@garlic.com>  
Rendered body type: text/plain

Hi,

Finally ! Got the thing operational on the satellites. The K023 software works great. Tried the "strong" Uo22 software on U022 and am not sure of its optimization ... maybe should have tried the "weak" version ... will do it for the next pass.

Once I'm happy with the operation, I start back on the PK-232 problem.

Again, Howard, tnx for your assistance.

Carol, W9HGI

---

## 237. Re: [DSP-93:1461] DSP93 Operational

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 20 Aug 1995 15:33:52 -0500  
To: dsp-93@tapr.org

Message-ID: <v02120d00ac5d4bf39f42@[204.251.33.65]>  
Rendered body type: text/plain

Carol,

I have not found the descriptions of the 9600 modems as they should apply to the various satellites to apply to MY station. Frank optimized the ISI modem for HIS station. Your mileage may vary. I found the 18% modems to work better on strong signals -- the 15% modems better on weaker signals (cuts out more noise).

Try them all and use what works best for you.

Ron

>Hi,  
>  
>Finally ! Got the thing operational on the satellites. The K023  
>software works great. Tried the "strong" Uo22 software on U022 and am  
>not sure of its optimization ... maybe should have tried the "weak"  
>version ... will do it for the next pass.  
>  
>Once I'm happy with the operation, I start back on the PK-232 problem.  
>  
>Again, Howard, tnx for you assistance.  
>  
>Carol, W9HGI

Ron W5RKN

also:  
rparsons@bga.com

---

## 238. Re: [DSP-93:1457] WA5VMS Heatstroke more info

From: Bob Stricklin <bstrick@dallas.net>  
Date: Sun, 20 Aug 1995 16:29:03 -0500  
To: dsp-93@tapr.org  
Message-ID: <9508202129.AA22460@dns>  
Rendered body type: text/plain

Making measurements of the clock signal will be difficult. If you use a scope it must be fast enough and the probe used will load the oscillator output.

The DSP chip will continue to run with a wide variation in clock frequency. It is sensitive to duty cycle and the shape of the edges of the clock. This would be the clock that is finally presented to the DSP chip. Look at page A-29 and A-30 of the TMS320C25 User's Guide for more information on this.

I too have had some problems looking at the clocking signals due to my scope and probe. If you want to monitor the stability of the clock I would monitor the clock signal at pin 6 of U114. Your scope is still going to have to be 100 MHz or so and the probe needs to be low capacitance.

The problems with the 74S03 have to do with its ability to sink the required current from R101, R102, and R103 and to switch fast enough to keep up. You may experiment with different values of resistors here if you have a unit that will fail reliably and you can draw some conclusions. The 74S03 will sink 20 mA on an output and we are only sinking about 10 mA. You can take the resistor down to 280 ohms. This should square up the duty cycle of the outputs if they were not square before.

We are probably seeing more than one problem with suspicion placed on something called heatstroke. Since so many people are not having a problem those that are must have a problem related to the components used and variations caused by the components. Since I do not have a unit that fails it is hard to find a problem.

At 09:40 PM 8/19/95 -0500, you wrote:

>  
>RE: WA5VMS DSP93 heatstroke phenomenon. by Bob, WB5A0H 8/19/95 pm.  
>  
>Joe called back on the telephone again, and came up with the following  
>additional info on the DSP clock osc and chain. To refresh the situation:  
>Joe, WA5VMS, is the one with the "heatstroke", mine apparently is OK.  
>  
>The markings on his osc can are:  
> 50008-136 40.000000 MHz MT013F AD M-TRON 94-41-09

>  
>My unit's markings are identical. His unit swings half what mine swings.  
>In addition to the scope, and to partially check the validity of the  
>scope, he took an average reading of that point with a DVM, and read 2.0 v dc.  
>I repeated it with my DVM and got 1.88 v dc. for whatever it is worth.  
>Perhaps some folks having troubles, but not having access to a fast  
>scope might be able to take and report this reading, and maybe some kind  
>of a statistical correlation might develop. Open leads to a sampling  
>DVM at 40 Meg is awfully sloppy. Anyhow I had a stable reading.  
>Our moral to the story: Get a good scope. Incidentally, this is the  
>first thing I ever worked on where I cranked the H Sweep selector all  
>the way over as fast as it would go. (I have a Tektronix 453).  
>  
>I also asked him Greg's question about the manufacturer of his 74S03.  
>His is a NTE. I think he said that Mouser listed them as NewTone Electric  
>or something like that, and he compared them to a substitution line of  
>parts somewhat analogous to ECG. I am not familiar with them myself.  
>Mine was a TI. Joe and I have had a running joke phrase between us for  
>years, a sales slogan of "A few will do". or a line of a few hundred  
>substitutes to replace a few thousand items on the market. Application  
>dependant of course. Maybe they are OK, maybe not. I don't know.  
>  
>So much for facts, now for the speculative part: Joe looked in the  
>DigiKey catalog and found clock oscillators of two kinds: TTL and CMOS  
>compatible outputs, and of course with different voltage swings. He and I  
>have identically marked oscillators, right down to what looks like a  
>date code, and they have a drastic difference in output. Assume we have a  
>CMOS output gate, and I really don't know for sure anyhow. They ought to  
>swing about rail to rail. There is a FET switch to either rail. Assume  
>that one or the other gets blown, then you might have a cruddy looking  
>output that might only swing from some arbitrary midpoint to one or the  
>other rails. That's the Best it could be expected to do. I contend that  
>is what is happening, at least in his case. Also, assume that it possible  
>for either gate to be blown, and the next guy with a problem might have  
>a different looking waveform. It might even work better with the TTL-S  
>downstream, and the problem might be harder to notice.  
>  
>It could further confuse things if there is some other unrelated problem  
>with similar symptoms that is running around.  
>  
>Maybe we should be using a TTL component all along? I DON'T know  
>what we really have anyhow.  
>  
>Next, if we have to replace such a component: It is soldered into a  
>multilayer board, and is going to be hard to remove. He says he thinks  
>he can do it with his fancy repair station, but the next guy might not  
>be so lucky. To begin with, if you got the thing out of there, but could not  
>clear solder from the Vcc and Vdd holes, you would have a tough time.  
>It might be preferable to dismantle the oscillator in place, and attach a  
>socket to what is left in the board. Anyhow, a socket might be preferable  
>the second time around, just in case there is a third time. He says there  
>are 4 pin machined-contact sockets made just for clock oscillator cans.  
>(I seem to remember some verbage in the manual to keep the leads short)?  
>Anybody have any better ideas?  
>  
>I will repeat my earlier gut feeling: if this is the typical situation of  
>"heatstroke" we ought to be more concerned about a 2:1 difference in  
>various clock oscillator output, than be concerned about minor differences  
>in 74S03's, particularly if the voltage swing doesn't look like TTL signals.  
>  
>73 de Bob  
>  
>Robert B. Morgan  
>WB5AOH  
>Austin, Texas  
>morganb@tenet.edu  
>

Bob Stricklin, N5BRG

## 239. Re: [DSP-93:1460] Re: Pk232 Connections

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Mon, 21 Aug 1995 02:57:59 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508210321.XAA13997@camel.campbell.edu>  
Rendered body type: text/plain

Guys,

I have used my PK232 with the DSP-93 no sweat on both the 1200 and 9600 birds.

Previously, I had the TAPR PSK modem and the TAPR9600 modem in line with the PK232 using the modem disconnect header kit and DCD state machine that TAPR sold (sells?).

Removal of the PSK and 9600 hardware modems let me "plug and play" with my DSP-93.

Radio baud of the pk232 is set thru software commands,

```
hbaud 1200 for psk/afsk 1200 modems,
hbaud 9600 for fsk 9600 modems.
```

If you have a choice, the MFJ-1270C I have interfaced with the DSP-93 is a better hookup because of the 9600 baud serial limit of the PK232 results in some overruns with the 9600 birds. It's useable, but pushing it.

At 12:35 8/20/95 -0500, you wrote:

```
>Hi Howard,
>
>Thank you for all your research. My problem my be software, as you say.
>Did not know about the fact that you needed to configure the PK-232 for
>satellite use. Have been using a PacCom NB-96 and their TNC on the
>satellites.
>
>I think that the wiring is right, except possibly the clock, as you
>said ? On the MFJ-1270C their are 3 switches to sent the radio Baud
>rate. May have to do the same thing with the PK-232 ??
>
>I had the PK-232 running, some time ago, with the old G3RUH FO-12 modem
>and the PacCom PSK-1. Never changed the parameters from VHF and 1200
>Baud. Will check it out for the FSK modems, and let you know.
>
>Have go through the PK-232 and MFJ-1270C schematics, but have not been
>able to determine much yet as the MFJ-1270 schematic dose not show the
>radio baud switches...will work getting an updated schematic.
>
>Also, got an MFJ-1270C, and am in the process of interfacing it with the
>DSP-93...am going to finish my first goal of getting the DSP-93 on line
>and operational ! Then, I'm going to work on the PK-232 interface ... it
>really bugs me, and I won't quit until it works!!
>
>Thanks again for all of your time and efforts. Will keep you informed.
>
>Carol
>
>
```

Mark L. Hammond [KC4EBR]

---

## 240. more PK232 stuff

```
From: "Mark L. Hammond" <hammond@camel.campbell.edu>
Date: Mon, 21 Aug 1995 03:08:41 +0000
To: dsp-93@tapr.org
Message-ID: <199508210332.XAA14012@camel.campbell.edu>
Rendered body type: text/plain
```

Guys,

I forgot to mention...

I recall simply unplugging the DSP-93 connector from the MFJ-1270C unit and plugging it onto the TAPR modem disconnect header on the PK232.

So, "pretend" your PK232 is an MFJ when you prepared the cable and check the pins to make sure the correct ones are shorted (see the diagram in the construction/connection documentation).

Now, getting the stinking PK232 in and out of KISS mode is ANOTHER story!

Mark L. Hammond [KC4EBR]

---

## 241. Re: [DSP-93:1420] Pk232 Connections

From: w6shp@amsat.org (Howard Sodja)  
Date: Sun, 20 Aug 1995 20:32:38 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508210332.UAA18937@hopf.dnai.com>  
Rendered body type: text/plain

Hello Carol,

If you have back issues of AMSAT Journal for Jan-Feb 1994 or OSCAR News for Aug. 1993 you can read a long article I wrote on the PK-232. If you do not have these back issues, I just got the following message this morning from Paul, KB5MU, the "keeper of AMSAT's server":

>The PK-232 article is now available on the AMSAT Web pages.

>

>Start on <http://www.amsat.org/articles/articles.html> and work your way  
>down to it. Let me know if I screwed anything up too badly.

I have yet to check it out. I will later tonight or tomorrow. It gives a history of the frustrations us PK-232 owners went through. You can see you are not alone in having frustrations with a tnc that is not 100 percent TAPR TNC compatible.

You should make notes of what you are doing so when you go back years from now you won't be in my situation of forgetting what you did to get it working. I kept messing around until it worked, and then breathed a sigh of relief and buttoned everything back up without noting in detail exactly what I did on those pins we were discussing. As Ron suggested, then write it up for future PK-232 users.

>I think that the wiring is right, except possibly the clock, as you  
>said ? On the MFJ-1270C there are 3 switches to set the radio Baud  
>rate. May have to do the same thing with the PK-232 ??

Do not confuse the PK-232's clock speed with terminal speed (TB) and packet link speed (HB). With the PK-232 the terminal rate is automatically set when you boot it with the auto-baud \* command. The PK-232 tests the terminal link and determines what the TB should be and sets it automatically. You know it is set when you get the eeprom greeting screen after you press \*. Set your terminal program to 9600 baud 8N1 and the PK-232 will figure that out by itself. The HB is set in the configuration file I sent you that must be uploaded before you load WISP or PB/PG.

I do not think clock speed needs to be set to a specific speed in the tnc as it must be for the TAPR PSK and G3RUH modems, though, as this problem has never appeared on the DSP-93 group. The only way to change the clock speed is to rewire the clock pin to the other IC pin I told you about. I think Ron told me that the tnc clock speed should not be a problem when I was trying to get my DSP-93 to work with my PK-232, as the DSP-93 uses its own clock. Yes, I had trouble getting things to work the first time too, and I spent several weeks before I got it going.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 242. New DSP93

From: EARLWC@aol.com  
Date: Mon, 21 Aug 1995 11:45:07 -0400  
To: dsp-93@tapr.org  
Message-ID: <950821114343\_79588993@mail06.mail.aol.com>  
Rendered body type: text/plain

Hi Ron

Got the chips from TAPR and installed. Ran all the preliminary tests and every thing looks ok. Just finished the port test and watched the outputs and leds cycle ok. I'm a little confused about gain test as it implies a speaker is to be used. With the scope, the required readings look fine, but no output at the spkr. Reading COMMENT paragraph it appears I shouldn't expect any output there. The buzz test using the spkr is ok.

Thanks for all the Help,

Earl W9HAD

---

## 243. SSTV Software

From: robertsm@JSC.MIL  
Date: Mon, 21 Aug 1995 12:42:54 -0400  
To: dsp-93@tapr.org  
Message-ID: <95Aug21.124610edt.29443@annap2.jsc.mil>  
Rendered body type: text/plain

Hi All;

DSP-93 here working fine, no heat problems.  
I noticed in an AMSAT ad for the DSP93 that SSTV software is available. Does anyone have the code, or is someone working on it?  
73 Mel W3MR robertsm@jsc.mil

---

## 244. Re: [DSP-93:1468] SSTV Software

From: Charles Stampf <hinces01@health.co.dutchess.ny.us>  
Date: Mon, 21 Aug 95 15:25:50 EDT  
To: dsp-93@tapr.org, dsp-93@tapr.org  
Message-ID: <MAPI.Id.0016.00696e63657330314443444330303030@MAPI.to.RFC822>  
Rendered body type: text/plain

Hi All,

My DSP-93 is also running cool and without incident. Mine is from the second build.

I too am interested in SSTV applications. Has there been any development in this area? Is any planned?

I would like to work on a project of this nature but my programming experience is almost nil, so I'm afraid I'd be a hinderence rather than a help. But I'm looking forward to any movement in this direction.

---

## 245. Bad problem!

From: dmedley@indirect.com (David Medley)  
Date: Mon, 21 Aug 1995 13:00:05 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508212000.NAA27800@bob.indirect.com>  
Rendered body type: text/plain

This morning when I fired up my system to do some more dsp93 work I found my 736 radio was only tuning up. No matter which way I turned the dial the freq increased. Yaesu tells me this is a known fault and requires replacement of the encoder. They also tell me it is a very simple job so I have ordered the necessary part. Anyone else out there had a similar experience? This radio is six years old and this is the first problem I have had with it. So for now I have no VHF/UHF capability so I guess I will try the HF modem. Looks like a good opportunity to do this. I have been a little intimidated by the voluminous documentation and instructions but Jim, K60YY has sent me some simplified material which has taken away most of my apprehensions. Will report my experiences with the modem.  
73 de Dave KI6QE

---

## 246. RE: [DSP-93:1448] Re: Hot HF interface ?'s

From: Bob Smith <bsmith@msn.com>  
Date: Sun, 20 Aug 95 21:34:09 UT  
To: dsp-93@tapr.org, Jim Lynch <k4gvo@america.net>  
Message-ID: <UPMAIL01.199508202135290603@msn.com>  
Rendered body type: text/plain

Thanks for the info Jim. Your suggestions worked great! I received some traffic.

Just a couple of questions.

I hear a constant squeel in my speaker hooked up to the DSP-93 - is this normal for this modem. I will say that properly decoded rtty will interrupt it with its signal.

How do you use the tuning bars on you PK900? I have one too. Also how do you have yours connected to the DSP-93. Have mine on the Modem disconnect header but I haven't cut any holes yet!

Are you using packrat software? I am using the WIN version w/ the 9600 bd modems and it works pretty well as a frontend to the DSP-93. Plan to ultimately use WISP for the sats but it is pretty nice for testing on the local 9.6 circuit.

-----  
From:

k4gvo@atl1.america.net on behalf of Jim Lynch  
Sent: Sunday, August 20, 1995  
2:33 AM  
To: Bob Smith  
Subject: RE: [DSP-93:1448] Re: Hot HF interface ?'s

> Date: Sat, 19 Aug 95 12:38:56 UT  
> From: Bob Smith  
<bsmith@msn.com>  
> To: Jim Lynch <k4gvo@america.net>  
> Subject:  
RE: [DSP-93:1448] Re: Hot HF interface ?'s

> OK so it should displ  
on D93WE??  
Mine does. It doesn't seem to print noise, so unless youve got  
the  
thing tuned to a station, you won't see any output. If you are  
  
listening to rtty on 40 or 20, use b4m8. The program doesn't provide  
you  
any feedback telling you that you got it all right, but if you  
just type  
b4m8 it should work. Tuning is real tricky. I've got a  
PK-900 in line  
with it and use the tuning indicator on it. I don't  
think I could do it  
with the LEDs. You don't have a feel for where  
you are. I've never  
listened to the output, so I don't know if it  
would help or not. Maybe  
I'll do that later when there's some  
activity. I sure wish there was a  
scope output on this thing.

Good luck! It's a hot box for sure.

>  
>

> -----  
> From: dsp-93@tapr.org on  
> behalf of Jim Lynch  
> Sent:  
Saturday, August 19, 1995 6:12 AM  
> To:  
> dsp-93@tapr.org  
> Subject:  
[DSP-93:1448] Re: Hot HF interface ?'s

>  
> > Date:  
> Sat, 19  
Aug 1995 00:15:26 -0500  
> > Reply-to: dsp-93@tapr.org  
> >  
> From:  
ljs@west.net (L.J.Shepherd)  
> > To: dsp-93@tapr.org  
>  
>  
> Subject: [DSP-93:1447] Re: Hot HF interface ?'s  
>  
> > Ron is  
correct.  
> No TNC is used with the HOT HF modem. Radio connects to  
> >  
DSP-93 Port 1,  
> Computer connects to the DSP-93 Serial Port.  
> >

>  
> > Good luck, Jim K60YY  
> >  
> >

> > >OK I think I'm  
> stupid... Trying to use the H0THF modem to get  
ARRL RTTY,  
> > >where is the  
> output going. Have the same setup as terr



9.6K packet that  
 >  
 > OK, where is  
 > HOTHF? I see it in the software.list  
 file on tapr, but I  
 > can't find it in  
 > the software, upload, util or  
 anyother directory  
 > under DSP93 on tapr.  
 >  
 >  
 > Help?  
 >  
 > Thanks,  
  
 > Jim.  
 > Jim Lynch                    Fayetteville, GA            K4GVO  
 > '86  
 >  
 GL1200I                    k4gvo@america.net            44.36.34.20  
 >  
 >  
 >  
 Jim Lynch  
           Fayetteville, GA            K4GVO  
 '86 GL1200I                    k4gvo@america.net  
 44.36.34.20

---

## 247. Re: [DSP-93:1469] Re: SSTV Software

From: Greg Jones <gjones@tenet.edu>  
 Date: Mon, 21 Aug 1995 21:36:54 -0500 (CDT)  
 To: dsp-93@tapr.org  
 Message-ID: <199508220236.VAA09024@Leslie-Francis.tenet.edu>  
 Rendered body type: text/plain

According to Charles Stampf:

>  
 > Hi All,  
 > My DSP-93 is also running cool and without incident. Mine is  
 > from the second build.  
 >  
 > I too am interested in SSTV applications. Has there been any  
 > development in this area? Is any planned?

Yes - as mentioend before, SSTV is mentioned in the ads as something to look forward to in the future. This was based on some code that someone was developing -- but looks like it will not be finsihed. so nothing released.

A lot of the SSTV mode depends on a well developed user interface on the computer.

So - here is a simple modem that someone could tackle and then develop the use interface for.

Maybe someone on channel can explain what a SSTV modem looks like.

> I would like to work on a project of this nature but my  
 > programming experience is almost nil, so I'm afraid I'd be a  
 > hinderence rather than a help. But I'm looking forward to any  
 > movement in this direction.  
 >

Cheers - Greg

---

## 248. Re: [DSP-93:1462] Re: DSP93 Operational

From: Carol Byers <crlbyers@garlic.com>  
 Date: Tue, 22 Aug 1995 09:20:25 -0700 (PDT)  
 To: dsp-93@tapr.org  
 Message-ID: <Pine.A32.3.91.950822091539.30838A-100000@garlic.com>  
 Rendered body type: text/plain

Hi Ron,

Tried the FSK modems and have found the KO-23 ISI filters to be as good as the pacComm NB-96. However, have not had very good luck with the UO-22 modems neither work ass good as the NB-96 at elevation angles less tha 10 deg (i.e., low S/N). At higher elevation angles, they are as good as the NB-96.

---

## 249. Re: [DSP-93:1464] Re: Pk232 Connections

From: Carol Byers <cr1byers@garlic.com>  
Date: Tue, 22 Aug 1995 09:31:53 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950822092902.30838B-100000@garlic.com>  
Rendered body type: text/plain

Hi Mark,

Yes, I think I undersstand the problem now...it is the HB command. I'll test it and let you know how it works.

Thanks for the help.

Carol, W9HGI

On Sun, 20 Aug 1995, Mark L. Hammond wrote:

```
> Guys,
>
> I have used my PK232 with the DSP-93 no sweat on both the 1200 and 9600 birds.
>
> Previously, I had the TAPR PSK modem and the TAPR9600 modem in line with the
> PK232 using the modem disconnect header kit and DCD state machine that TAPR
> sold (sells?).
>
> Removal of the PSK and 9600 hardware modems let me "plug and play" with my
> DSP-93.
>
> Radio baud of the pk232 is set thru software commands,
>
> hbaud 1200 for psk/afsk 1200 modems,
> hbaud 9600 for fsk 9600 modems.
>
> If you have a choice, the MFJ-1270C I have interfaced with the DSP-93 is a
> better hookup because of the 9600 baud serial limit of the PK232 results in
> some overruns with the 9600 birds. It's useable, but pushing it.
>
>
> At 12:35 8/20/95 -0500, you wrote:
> >Hi Howard,
> >
> >Thank you for all your research. My problem my be software, as you say.
> >Did not know about the fact that you needed to configure the PK-232 for
> >satellite use. Have been using a PacCom NB-96 and their TNC on the
> >satellites.
> >
> >I think that the wiring is right, except possibably the clock, as you
> >said ? On the MFJ-1270C their are 3 switches to sent the radio Baud
> >rate. May have to do the same thing with the PK-232 ??
> >
> >I had the PK-232 running, some time ago, with the old G3RUH F0-12 modem
> >and the PACCom PSK-1. Never changed the parameters from VHF and 1200
> >Baud. Will check it out for the FSK modems, and let you know.
> >
> >Have go through the PK-232 and MFJ-1270C schematics, but have not been
> >able to determine much yet as the MFJ-1270 schematic dose not show the
> >radio baud switches...will work getting an updated schematic.
> >
> >Also, got an MFJ-1270C, and am in the process of interfacing it with the
> >DSP-93...am going to finish my first goal of getting the DSP-93 on line
> >and operational ! Then, I'm going to work on the PK-232 interface ... it
> >really bugs me, and I won't quit until it works!!
> >
> >Thanks again for all of your time and efforts. Will keep you informed.
> >
> >Carol
> >
> >
> >
> >
> Mark L. Hammond [KC4EBR]
>
>
```

## 250. Re: [DSP-93:1466] Re: Pk232 Connections

From: Carol Byers <crlbyers@garlic.com>  
Date: Tue, 22 Aug 1995 09:38:08 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950822093534.30838C-100000@garlic.com>  
Rendered body type: text/plain

Hi Howard,

Ok, on the AMSAT Journal, I'll look it up.

Got the DSP-93 working with the MFJ-1270C, and am about ready to go for the PK-232...  
How do you get the PK-232 out of the KISS mode ???

Thanks again Howard,

Carol, W9HGI

On Sun, 20 Aug 1995, Howard Sodja wrote:

> Hello Carol,  
>  
> If you have back issues of AMSAT Journal for Jan-Feb 1994 or OSCAR News for  
> Aug. 1993 you can read a long article I wrote on the PK-232. If you do not  
> have these back issues, I just got the following message this morning from  
> Paul, KB5MU, the "keeper of AMSAT's server":  
>  
> >The PK-232 article is now available on the AMSAT Web pages.  
> >  
> >Start on <http://www.amsat.org/articles/articles.html> and work your way  
> >down to it. Let me know if I screwed anything up too badly.  
>  
> I have yet to check it out. I will later tonight or tomorrow. It gives a  
> history of the frustrations us PK-232 owners went through. You can see you  
> are not alone in having frustrations with a tnc that is not 100 percent TAPR  
> TNC compatible.  
>  
> You should make notes of what you are doing so when you go back years from  
> now you won't be in my situation of forgetting what you did to get it  
> working. I kept messing around until it worked, and then breathed a sigh of  
> relief and buttoned everything back up without noting in detail exactly what  
> I did on those pins we were discussing. As Ron suggested, then write it up  
> for future PK-232 users.  
>  
> >I think that the wiring is right, except possibly the clock, as you  
> >said ? On the MFJ-1270C there are 3 switches to set the radio Baud  
> >rate. May have to do the same thing with the PK-232 ??  
>  
> Do not confuse the PK-232's clock speed with terminal speed (TB) and packet  
> link speed (HB). With the PK-232 the terminal rate is automatically set  
> when you boot it with the auto-baud \* command. The PK-232 tests the  
> terminal link and determines what the TB should be and sets it  
> automatically. You know it is set when you get the eeprom greeting screen  
> after you press \*. Set your terminal program to 9600 baud 8N1 and the  
> PK-232 will figure that out by itself. The HB is set in the configuration  
> file I sent you that must be uploaded before you load WISP or PB/PG.  
>  
> I do not think clock speed needs to be set to a specific speed in the tnc as  
> it must be for the TAPR PSK and G3RUH modems, though, as this problem has  
> never appeared on the DSP-93 group. The only way to change the clock speed  
> is to rewire the clock pin to the other IC pin I told you about. I think  
> Ron told me that the tnc clock speed should not be a problem when I was  
> trying to get my DSP-93 to work with my PK-232, as the DSP-93 uses it's own  
> clock. Yes, I had trouble getting things to work the first time too, and I  
> spent several weeks before I got it going.  
>  
> 73  
> Howard Sodja, W6SHP In the SF Bay area  
> AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
> Microsats @ K0-23 and A0-16  
> w6shp@amsat.org  
>  
>

---

## 251. Re: [DSP-93:1473] Re: DSP93 Operational

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 22 Aug 1995 11:39:45 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d02ac5fb842dd18@[204.181.160.87]>  
Rendered body type: text/plain

Carol,

I don't understand. What modem are you calling the UO-22 modem. All three FSK modems work with UO-22, KO-23 and K0-23. One may be better with a particular satellite on YOUR system. Try them all on each satellite.

Ron

>Hi Ron,  
>  
>Tried the FSK modems and have found the K0-23 ISI filters to be as good  
>as the pacComm NB-96. However, have not had very good luck with the  
>UO-22 modems neither work as good as the NB-96 at elevation angles less  
>than 10 deg (i.e., low S/N). At higher elevation angles, they are as good  
>as the NB-96.  
>  
>Carol

Ron W5RKN

also:  
rparsons@bga.com

---

## 252. Re: [DSP-93:1470] Bad problem!

From: Carol Byers <crlbyers@garlic.com>  
Date: Tue, 22 Aug 1995 09:44:45 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950822094329.30838D-100000@garlic.com>  
Rendered body type: text/plain

Hi Dave,

I have a 736 too, but no problem to date...let me know how things go.

73's de Carol, W9HGI

On Mon, 21 Aug 1995, David Medley wrote:

> This morning when I fired up my system to do some more dsp93 work I found my  
> 736 radio was only tuning up. No matter which way I turned the dial the freq  
> increased. Yaesu tells me this is a known fault and requires replacement of  
> the encoder. They also tell me it is a very simple job so I have ordered the  
> necessary part. Anyone else out there had a similar experience? This radio  
> is six years old and this is the first problem I have had with it.  
> So for now I have no VHF/UHF capability so I guess I will try the HF modem.  
> Looks like a good opportunity to do this. I have been a little intimidated  
> by the voluminous documentation and instructions but Jim, K60YY has sent me  
> some simplified material which has taken away most of my apprehensions. Will  
> report my experiences with the modem.  
> 73 de Dave KI6QE  
>  
>

---

## 253. Re: [DSP-93:1465] more PK232 stuff

From: Carol Byers <crlbyers@garlic.com>  
Date: Tue, 22 Aug 1995 09:51:36 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950822095022.30838E-100000@garlic.com>  
Rendered body type: text/plain

Hi Mark,  
Thanks for the suggestions. Was wondering, how do you get the PK232 out  
of the KISS mode ?

On Sun, 20 Aug 1995, Mark L. Hammond wrote:

> Guys,  
>  
> I forgot to mention...

>  
> I recall simply unplugging the DSP-93 connector from the MFJ-1270C unit and  
> plugging it onto the TAPR modem disconnect header on the PK232.  
>  
> So, "pretend" your PK232 is an MFJ when you prepared the cable and check the  
> pins to make sure the correct ones are shorted (see the diagram in the  
> construction/connection documentation).  
>  
> Now, getting the stinking PK232 in and out of KISS mode is ANOTHER story!  
>  
>  
> Mark L. Hammond [KC4EBR]  
>  
>

---

## 254. Re: [DSP-93:1470] Bad problem!

From: n7ryw@teleport.com (William Roth)  
Date: Tue, 22 Aug 1995 10:14:41 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508221713.KAA16844@desiree.teleport.com>  
Rendered body type: text/plain

Earlier, Dave wrote about his FT-736 problem:

>No matter which way I turned the dial the freq  
>increased. Anyone else out there had a similar experience?

I've done this repair with a couple of these units. To verify that the problem is the encoder, use the microphone up and down switches. If they both work, it is encoder related. If not, it is somewhere else.

The repair is a bit involved for the average Ham, but not too bad. The set screw for the knob is under the rubber band around the knob. It is easy to stretch the band out of shape, too, so be very careful taking it off! The rest is pretty evident, but if you have a problem don't hesitate to give me a yell.  
>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

## 255. Warning: AC plugs look alike

From: deh6@po.CWRU.Edu (Donald E. Haselwood)  
Date: Tue, 22 Aug 1995 11:16:59 -0400  
To: dsp-93@tapr.org  
Message-ID: <199508221516.LAA20376@kanga.INS.CWRU.Edu>  
Rendered body type: text/plain

I upgraded my KAM to V8.0. After installing the ROM, checking it out, and putting in the box, I plugged in the cables and turned it on. It went CRAZY. It even emitted a high-pitched "sing." What's wrong? Pulling plugs one at a time I finally found the problem--I had plugged the power to the DSP-93 into the KAM. Both were lying close together in the rats-nest of cables and they are identical. I picked up the wrong one. AC really makes for crazy behavior.

Fortunately nothing was damaged, a tribute to the foresight of the designer to add a diode to prevent reverse voltage.

Hence, a warning. Mark the DSP-93 power plug so that it isn't easily confused. Some units might not be so forgiving as the KAM.

73's  
Don, K4JPJ

---

## 256. Archives

From: deh6@po.CWRU.Edu (Donald E. Haselwood)  
Date: Tue, 22 Aug 1995 15:09:09 -0400  
To: dsp-93@tapr.org  
Message-ID: <199508221909.PAA05516@kanga.INS.CWRU.Edu>  
Rendered body type: text/plain

I was trying to get back up-to-date with the messages. AUG.95 came in uncompressed form (big, too--over 400K). JUL.95.Z (JUL.Z when I got it into the machine [IBM]) appears to be compressed, but PKUNZIP/PKZIPFIX doesn't like it. What is needed?

73's

---

## 257. TNC-95

From: deh6@po.CWRU.Edu (Donald E. Haselwood)  
Date: Tue, 22 Aug 1995 15:09:44 -0400  
To: dsp-93@tapr.org  
Message-ID: <199508221909.PAA05775@kanga.INS.CWRU.Edu>  
Rendered body type: text/plain

I'm not current with the July messages. Recent mail makes it sound like the TNC-95 design is pretty much a done-deal. Nevertheless I hope that it will have capability for programs to be downloaded so that hacks like myself can experiment with weird ideas. (Lot's of spare in/out bit lines are always handy.)

The non-kit part sounds fine. Last Fall when I built the DSP-93 it was over 20 years since doing much hands-on construction. Wow have the parts become small! When I see pc boards, say for the computer, they don't seem like much. Actually putting it together corrects that thinking! For the DSP-93 I found a big lighted, magnifier was essential. The more depressing part was the old hands aren't as steady as they used to be. Even smaller connections sounds like trouble for me.

When will orders be taken?

73's  
Don, K4JPJ

---

## 258. Re: [DSP-93:1482] TNC-95

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 22 Aug 1995 16:44:53 -0400  
To: dsp-93@tapr.org  
Message-ID: <v01530508ac5faa0fa085@[152.38.1.2]>  
Rendered body type: text/plain

Donald,

There are TWO modem projects (of which I am aware, anyhow) that are for "plugging into" the DSP-93 to satisfy the unit's thirst for TNC-2 code.

One is the TAPR TNC-95. The other is a board that is a little further along from Paccomm. Not sure of its name/model.

Personally, I'm going to get both =)

>I'm not current with the July messages. Recent mail makes it  
>sound like the TNC-95 design is pretty much a done-deal.  
>Nevertheless I hope that it will have capability for programs to  
>be downloaded so that hacks like myself can experiment with weird  
>ideas. (Lot's of spare in/out bit lines are always handy.)  
>  
>The non-kit part sounds fine. Last Fall when I built the DSP-93  
>it was over 20 years since doing much hands-on construction. Wow  
>have the parts become small! When I see pc boards, say for the  
>computer, they don't seem like much. Actually putting it  
>together corrects that thinking! For the DSP-93 I found a big  
>lighted, magnifier was essential. The more depressing part was  
>the old hands aren't as steady as they used to be. Even smaller  
>connections sounds like trouble for me.  
>  
>When will orders be taken?  
>  
>73's  
>Don, K4JPJ

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 259. Re: [DSP-93:1475] Re: Pk232 Connections

From: w6shp@amsat.org (Howard Sodja)  
Date: Tue, 22 Aug 1995 14:31:05 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508222131.OAA08442@hopf.dnai.com>  
Rendered body type: text/plain

Hello again, Carol,

>Got the DSP-93 working with the MFJ-1270C, and am about ready to go for  
>the PK-232...  
>How do you get the PK-232 out of the KISS mode ???

PB/PG will get you out of KISS mode when you exit. I tried WISP a while back and helped Chris get WISP to do it. He finally got a version that got mine out, but I have seen messages of others complaining they cannot exit KISS when leaving WISP. Try exiting WISP and see if you are still in KISS.

If this does not work, send "<control>C" three times, spaced a second or two apart. Too fast or too slow and you will remain in KISS. Chris tried different timings until my system got out of KISS, but perhaps other setups need a slightly different timing.

Before PB/PG did this inside their program, I had a short script in my modem program which sent the ^C ^C ^C with the proper timing to get it out of KISS.

Isn't this all great fun ;-)

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 260. Bad PK-232 URL

From: w6shp@amsat.org (Howard Sodja)  
Date: Tue, 22 Aug 1995 14:31:19 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508222131.0AA08490@hopf.dnai.com>  
Rendered body type: text/plain

Carol and other PK-232 users,

I tried to check out my PK-232 article on AMSAT's WEB page but got:

>404 NOT FOUND  
>The requested URL /articles/ was not found on this server

So I wrote to Paul and he replied:

>Well, it would probably help if I gave you the correct URL. Try this:  
>  
><http://www.amsat.org/amsat/articles/articles.html>

This works fine. Sorry for sending you off to a nonexistent URL.

73  
Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 261. Re: [DSP-93:1409] "Cool Units" ?

From: MS16948@LTU.EDU  
Date: Tue, 22 Aug 1995 18:56:11 -0400 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <01HUDUA69UHUA25HLK@LTU.EDU>  
Rendered body type: text/plain

My unit came up first time, passed all the testes and ran for 48 hours in the closed cabinet okay.

û Murray Scott, KE8UM  
Clawson, Michigan

---

## 262. Re:archives

From: Bob Morgan <morganb@tenet.edu>  
Date: Tue, 22 Aug 1995 18:20:13 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508222320.SAA10273@Gayle-Gaston.tenet.edu>  
Rendered body type: text/plain

According to Donald E. Haselwood:

>  
> I was trying to get back up-to-date with the messages. AUG.95

> came in uncompressed form (big, too--over 400K). JUL.95.Z (JUL.Z  
> when I got it into the machine [IBM]) appears to be compressed,  
> but PKUNZIP/PKZIPFIX doesn't like it. What is needed?  
>  
> 73's  
> Don, K4JPJ  
>  
I just ran into this one myself a few days ago. Leave the .Z files on  
your server, and run the unix command uncompress <filename> on each  
of them. The .Z file will be replaced by a regular ascii file, and will  
be considerably bigger. The stuff is case sensitive. Then download the  
ascii in the usual way.  
73 de Bob  
Robert B. Morgan  
WB5AOH  
Austin, Texas  
morganb@tenet.edu

---

## 263. Pk232+kiss on/off

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 23 Aug 1995 01:41:56 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508230206.WAA02110@camel.campbell.edu>  
Rendered body type: text/plain

For what it's worth, PB/PG would never get my PK232 out of kiss mode.  
Getting one's PK232 in and out of host mode varies with the EPROMs that are  
in your unit. About 6 years ago, my elmer KC4SA and I found ours to be  
different.

I ordered a new set of EPROMs from AEA for mine over 5 years ago and am  
still waiting on them to arrive.....

I agree with Howard that the right number of Ctrl-C's with the right timing  
is the secret...

At 16:32 8/22/95 -0500, you wrote:

>Hello again, Carol,  
>  
>>Got the DSP-93 working with the MFJ-1270C, and am about ready to go for  
>>the PK-232...  
>>How do you get the PK-232 out of the KISS mode ???  
>  
>PB/PG will get you out of KISS mode when you exit. I tried WISP a while  
>back and helped Chris get WISP to do it. He finally got a version that got  
>mine out, but I have seen messages of others complaining they cannot exit  
>KISS when leaving WISP. Try exiting WISP and see if you are still in KISS.  
>  
>If this does not work, send "<control>C" three times, spaced a second or two  
>apart. Too fast or too slow and you will remain in KISS. Chris tried  
>different timings until my system got out of KISS, but perhaps other setups  
>need a slightly different timing.  
>  
>Before PB/PG did this inside their program, I had a short script in my modem  
>program which sent the ^C ^C ^C with the proper timing to get it out of KISS.  
>  
>Isn't this all great fun ;-)  
>  
>73  
>Howard Sodja, W6SHP In the SF Bay area  
>AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
>Microsats @ K0-23 and A0-16  
>w6shp@amsat.org  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 264. HF Modem

From: dmedley@indirect.com (David Medley)  
Date: Tue, 22 Aug 1995 22:05:52 -0700  
To: DSP-93@tapr.org  
Message-ID: <199508230505.WAA07963@bob.indirect.com>  
Rendered body type: text/plain



Jim K60YY and Howard W6SHP et al  
I spent much of today playing with the HF modem. The radio is a Collins  
KWM380 and it has the rttty filter installed. I had great difficulty in  
finding anything that would result in any copy, not even garbage. The  
breakthrough occurred when W1AW came on with bulletins and the RTTY printed  
splendidly. However when AMTOR came on and I punched the Y command all  
printing ceased never to start again. I had tried previously to copy signals  
in the maritime bands around 12.6 MHz but nothing resulted in print although  
all the LEDs appeared to be winking as they should.  
Will try some more tomorrow.  
Dave KI6QE

---

## 265. Re: [DSP-93:1487] Re:archives

From: deh6@po.CWRU.Edu (Donald E. Haselwood)  
Date: Wed, 23 Aug 1995 10:22:40 -0400  
To: dsp-93@tapr.org  
Message-ID: <199508231422.KAA27424@kanga.INS.CWRU.Edu>  
Rendered body type: text/plain

Bob,

Thanks for the help. I'll see if that does the trick.  
73's  
Don, K4JPJ

---

## 266. Expanding archives

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 23 Aug 1995 11:04:24 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac610083fc95@[204.251.33.32]>  
Rendered body type: text/plain

There was a recent question here on expanding the .Z files that are the  
compressed archive files. There are easy answers for UNIX and the Mac but I  
didn't see a DOS/Windows solution.

Is there a DOS/Windows expander for .Z? If so, it ought to be on the TAPR  
ftp site. If not, perhaps the archives should be zipped.

Ron W5RKN

also:  
rparsons@bga.com

---

## 267. Re: [DSP-93:1491] Expanding archives

From: Gerald J Creager <gergy@cs.tamu.edu>  
Date: Wed, 23 Aug 1995 11:23:42 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508231623.LAA09638@solar.cs.tamu.edu>  
Rendered body type: text/plain

There's a GnuZip package for the PC that'll work. Check out

ftp://oak.oakland.edu/simtel/msdos/compress/gzip124.zip

It's working well for me.

73, gerry

--

Gerry Creager N5JXS                   \* SAREX Co-Investigator  
gergy@cs.tamu.edu                   \* A little radio that lets kids talk  
                                     \* to astronauts, and smile

\*\*\*\*\*

---

## 268. Re: [DSP-93:1491] Expanding archives

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 23 Aug 1995 13:05:49 -0400  
To: dsp-93@tapr.org  
Message-ID: <v01530507ac60d2fda509@[152.38.1.2]>  
Rendered body type: text/plain

If I recall correctly, WinZip running under Windows 95 supports "drag and  
drop" automagic unarchiving of many formats, including .Z, .tar, and .gz  
extensions.

>There was a recent question here on expanding the .Z files that are the  
>compressed archive files. There are easy answers for UNIX and the Mac but I  
>didn't see a DOS/Windows solution.  
>  
>Is there a DOS/Windows expander for .Z? If so, it ought to be on the TAPR  
>ftp site. If not, perhaps the archives should be zipped.  
>  
>  
>Ron WSRKN  
>  
>also:  
>rparsons@bga.com

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 269. RE: [DSP-93:1493] Re: Expanding archives

From: "Beaudry, Tom" <Tom\_Beaudry@tvratings.com>  
Date: Wed, 23 Aug 95 13:09:00 PDT  
To: dsp-93 <dsp-93@tapr.org>  
Message-ID: <303B8A81@mailgate.dun.nielsen.com>  
Rendered body type: text/plain

Here is the description for WinZip on all Windows platforms:

WinZip -- WinZip is the best compression/uncompression utility available on the 'net. One of its most useful features is the ability to check out a zipped program, or even to install an archive, and then uninstall it later if you decide you'd rather not keep it. The on-line help documentation is definitely one of the most complete and helpful available. It includes extensive information on the program itself, compression types and formats available, a brief tutorial, and even a section with quick hints and tips. WinZip includes the ability to compress/decompress ZIP, Z, TAR, and GZIP formats, as well as providing a front-end for decompressing LZH and ARJ files. WinZip also provides a front-end for making an EXE file from a zipped archive. Providing a front-end means that WinZip can run these tasks through its interface, but a companion piece of software must perform the actual task. Additional features include scanning downloaded archives for viruses (as a front-end), the ability to quickly compress entire directories, and the ability to run as a pull-down menu from within File Manager.

You can find the different versions at: <<http://www.winzip.com/>>

-----  
From: dsp-93[SMTP:dsp-93@tapr.org]  
Sent: Wednesday, August 23, 1995 11:50 AM  
To: dsp-93  
Subject: [DSP-93:1493] Re: Expanding archives

If I recall correctly, WinZip running under Windows 95 supports "drag and drop" automagic unarchiving of many formats, including .Z, .tar, and .gz extensions.

>There was a recent question here on expanding the .Z files that are the  
>compressed archive files. There are easy answers for UNIX and the Mac  
but I  
>didn't see a DOS/Windows solution.  
>  
>Is there a DOS/Windows expander for .Z? If so, it ought to be on the  
TAPR  
>ftp site. If not, perhaps the archives should be zipped.  
>  
>  
>Ron WSRKN  
>  
>also:  
>rparsons@bga.com

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 270. Re: [DSP-93:1491] Expanding archives

From: hank@cospc.com (Hank Pustarfi)  
Date: Wed, 23 Aug 1995 13:29:23 -0400 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <m0slJcC-0004P9C@bonzai.cospc.com>  
Rendered body type: text/plain

Recently; Ronald G. Parsons said;

>\_ There was a recent question here on expanding the .Z files that are the  
>\_ compressed archive files. There are easy answers for UNIX and the Mac but I  
>\_ didn't see a DOS/Windows solution.  
>\_  
>\_ Is there a DOS/Windows expander for .Z? If so, it ought to be on the TAPR  
>\_ ftp site. If not, perhaps the archives should be zipped.

Get the source for gzip from any GNU archive site. gunzip knows how to  
unpack .z or .Z files.

--

Hank Pustarfi                      k3wgv@k3wgv.ampr.org                      hank@bonzai.cospc.com

"It is always the adventurers who accomplish great things." - Montesquieu

---

## 271. Re: [DSP-93:1489] HF Modem

From: Mills@huey.udel.edu  
Date: Wed, 23 Aug 95 13:38:34 EDT  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <9508231338.aa22314@huey.udel.edu>  
Rendered body type: text/plain

David,

The D93WE program sometimes locks up on modem print. Try using the  
Windows terminal program or some other terminal emulator. Be sure that  
Collins filter passband is wide enough for the AMTOR stuff about 2000-  
2400 Hz. A 250-Hz filter doesn't quite cut it. The SITOR decoder is  
so persistent, you can run with the SSB filter, even with the AGC  
bouncing from nearby QRM, and still copy most anything.

Dave

---

## 272. Re: [DSP-93:1262] Sockets

From: DGrybos@aol.com  
Date: Wed, 23 Aug 1995 16:34:21 -0400  
To: dsp-93@tapr.org  
Message-ID: <950823163419\_61567355@mail04.mail.aol.com>  
Rendered body type: text/plain

Obviously way behind in reading my mail...

Have you tried the usual places like Halted etc.?

I suspect you have long ago completed your assembly.

73's

Dave, KK6US

---

## 273. Re: [DSP-93:1476] Re: DSP93 Operational

From: Carol Byers <crlbyers@garlic.com>  
Date: Wed, 23 Aug 1995 13:54:38 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950823135024.23670A@garlic.com>  
Rendered body type: text/plain

Hi Ron, was not aware if that? Will try all three.

Another question:

When I run an .OBJ file it generates Hi and LO file. What is their  
purpose, and how do I read them ?

On Tue, 22 Aug 1995, Ronald G. Parsons wrote:

> Carol,

>  
> I don't understand. What modem are you calling the U0-22 modem. All three  
> FSK modems work with U0-22, K0-23 and K0-23. One may be better with a  
> particular satellite on YOUR system. Try them all on each satellite.  
>  
> Ron  
>  
>  
> >Hi Ron,  
> >  
> >Tried the FSK modems and have found the K0-23 ISI filters to be as good  
> >as the pacComm NB-96. However, have not had very good luck with the  
> >U0-22 modems neither work as good as the NB-96 at elevation angles less  
> >tha 10 deg (i.e., low S/N). At higher elevation angles, they are as good  
> >as the NB-96.  
> >  
> >Carol  
> >  
> Ron W5RKN  
>  
> also:  
> rparsons@bga.com  
>  
>  
>

---

## 274. Re: [DSP-93:1484] Re: Pk232 Connections

From: Carol Byers <crlbyers@garlic.com>  
Date: Wed, 23 Aug 1995 14:03:47 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950823135943.23670B-100000@garlic.com>  
Rendered body type: text/plain

Hi Howard,

Yes this stuff is great...now I remember the "3 control C's" to getout of the KISS mode. Thanks for the reminder...it's been a long time!

Am in the process of building up a cable for the PK-232...maybe will have time this weekend to get it working.

Have not had time to look for the 94 issue of AmSAT yet, but have all the back issues...and will find it.

CU

Carol, W9HGI

---

## 275. Re: [DSP-93:1485] Bad PK-232 URL

From: Carol Byers <crlbyers@garlic.com>  
Date: Wed, 23 Aug 1995 14:16:10 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950823141529.23670C-100000@garlic.com>  
Rendered body type: text/plain

Hi Howard,

Just downloaded a copy of your article.

Thanks again,

Carol, W9HGI

---

## 276. Re: [DSP-93:1498] Re: DSP93 Operational

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 23 Aug 1995 19:23:17 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac6173557973@[204.181.160.93]>  
Rendered body type: text/plain

Carol,

>

>Another question:

>

>When I run an .OBJ file it generates Hi and LO file. What is their  
>purpose, and how do I read them ?

>

DSPLOAD creates the .LO and .HI files from the .OBJ file. These contain the HI and LO bytes of each 16 bit word of the "intel" loader string in the .OBJ file. These two files are loaded with the DSP-93 Monitor "H" and "L" commands.

Thus DSPLOAD creates .HI and .LO, issues the Monitor H and L commands, then the G command to execute the loaded software.

Ron W5RKN

also:  
rparsons@bga.com

---

## 277. wanted: dsp-93 functional

From: bandy@server.elysian.net (John Bandy)  
Date: Wed, 23 Aug 95 19:29 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0slQAJ-00025xC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: wanted: dsp-93 functional diagram

Hello dsp93'ers,

If you have a functional diagram of this modem, please send it to:

John Bandy W0UT  
2810 Euclid  
Wichita, Ks  
67217-1927

Thanks you,

73's  
John W0UT

---

□ OLX 1.53 □ Times fun when you're having flies! Kermit the Frog.

---

## 278. WA5VMS Heatstroke Solution

From: Bob Morgan <morganb@tenet.edu>  
Date: Wed, 23 Aug 1995 21:20:51 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508240220.VAA21144@beall.tenet.edu>  
Rendered body type: text/plain

Joe WA5VMS called just now to report what he had found as a solution for his apparent case of heatstroke on his DSP93. He had placed a rush order with both DigiKey and JDR (Digikey got there first) for some 40 Meg TTL oscillators and some 74S03's. He swapped out the oscillator and now everything is running fine so far. He reports a little better looking waveform at the oscillator output, and the tendency of the scope probe to load the oscillator and crash the unit is now completely gone. He looked at it with the scope, and reports the waveform is approximately TTL decision levels. He has NOT changed the 74S03, and I suspect it won't be necessary. He had the NTE chip there.

Removal amounted to use of conventional regulated soldering iron and some solderwick, and prying the unit up a corner at a time. The +5 pad was the most troublesome to heat.

Parts references: DigiKey CTX120-ND for the CTS 40 Meg oscillator, at \$3.25, and DM74S03-ND at \$1.07. There IS a \$5 adder for under a minimum order.

Joe estimates his total amount of debugging time since construction to be about 4 hours. A note to greg- He is spending the greater amount of his time on the Mitrex conversion, not this thing.

At this time, we feel that the oscillator was his problem, and the effect noted by cooling down the S03 was probably just changing that chips decision threshold just enough to barely respond to a bad input waveform, as opposed to jst barely not respond to it.

We also feel that the chances of more than one problem being responsible for the reported cases are fairly high. Others might have something else wrong, creating similar symptoms.

I suggested to Greg privately the other day that it might be worth considering to propose that those persons who have the 'heatstroke'

phenomenon, who happen to be planning to attend the DCC next month (if this set of individuals exists) bring their DSP93 with them, and that a person be appointed to bring a scope and maybe some parts and tools to someplace near the meeting, and do some testing and troubleshooting of the clock chains of those units to: 1-find out what is going on, and 2-get folks units running. I think that Joe could possibly volunteer some time, maybe I could also, and I do have a 50 Meg scope, maybe someone around DFW might have a faster one. Anyhow Joe liked that idea. As of this writing, THERE ARE NO COMMITTED PLANS TO DO THIS. It is just an idea.

73 de Bob

Robert B. Morgan  
WB5AOH  
Austin, Texas  
morganb@tenet.edu

---

## 279. What a day!!

From: dmedley@indirect.com (David Medley)  
Date: Fri, 25 Aug 1995 14:03:15 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508252103.OAA28261@bob.indirect.com>  
Rendered body type: text/plain

Howard et al,  
Yesterday the UPS man brought me a new encoder for my 736, so this morning acting on the advice of a YAESU tech that is was a real simple job to replace it, I started dismantling the radio. Adfter taking off the top and bottom covers and releasing the front panel I noted that behind the tuning knob was a fairly large black box. The part YAESU sent me looked like a smallish pot. So another call to Yaesu with a different tech who said you have a difficult job to do even in our shop!! Turns out my radio is very old and since then the encoder has been redesigned and updated. The catch being that it takes a rather larger hole to mount it. To get the old unit out required the removal of the plastic overlay to the front panel in order to get at a screw which held on the abovementioned black box. To do this required the removal of all the knobs which is OK until you get to the main tuning knob. This is held to the shaft by an allen screw which can only be accessed by removing the rubber ring from the knob. This, of course, is stuck on and had to be cut to remove it. On removing the plastic face plate many little push buttons flew out in all directions!! However, once all this was achieved replacing the encoder took approximately 30 seconds, the only catch being YAESU did not supply a retaining nut. Fortunately my junk box came up with one. Putting the faceplate back required a considerable amount of igenuity but I soon hit on a scheme to hold all the push buttons in with scotch tape. Once this was achieved, reassembly took a fairly short time. On turning the radio on there was a great silence from the speaker but after complete panic subsided I found the squelch control was tuned fully clockwise when I was putting the knob back on. The radio is now working just fine. Yaesu are sending me a new tuning knob so all is well.  
Dave KI6QE

---

## 280. Windows95

From: dmedley@indirect.com (David Medley)  
Date: Fri, 25 Aug 1995 14:03:32 -0700  
To: dsp-93@tapr.org  
Message-ID: <199508252103.OAA28272@bob.indirect.com>  
Rendered body type: text/plain

Soon after I had completed repairing my 736 the UPS man brought a parcel containing Windows95. Very impressive on first acquaintance. You start with a program which wrings out your system and makes it ready for WIN95, Then you have a really great Video which you can enter at whatever level you like. This lasts several hours if you want to go through the whole thing. Once you have done that then you go ahead and load up Win95. This took about 45 minutes from a CDROM but went without a hitch after which I found I could run programs with the minimum of difficulty. This must be the first time I have loaded a major package without a hitch. Once you have it up an running you can register with microsoft on line. Just answer a few questions and it is done. Then you can sign up for 10 free hours on the network, after which you get a message of welcome from Bill Gates!!! It all gives you a nice warm feeling. As soon as I have calmed down from all this excitement I will try WiSP.  
Dave KI6QE

---

## 281. Re: [DSP-93:1501] Re: DSP93 Operational

From: Carol Byers <crlbyers@garlic.com>  
Date: Fri, 25 Aug 1995 15:54:54 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950825155321.22764A-100000@garlic.com>  
Rendered body type: text/plain

Hi Ron,

Ahu, now I understand how the .Hi and .LO files work.

Thank you,

Carol, W9HGI

---

## 282. Re: [DSP-93:1503] WA5VMS Heatstroke Solution

From: Carol Byers <crlbyers@garlic.com>  
Date: Fri, 25 Aug 1995 16:03:00 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950825155938.22764C-100000@garlic.com>  
Rendered body type: text/plain

Hi Bob,

This is an interesting conclusion...what did the waveform look like on the "bad" oscillator ? Now, it would be interesting to see if this fixes the other victims?

On Wed, 23 Aug 1995, Bob Morgan wrote:

> Joe WA5VMS called just now to report what he had found as a solution  
> for his apparent case of heatstroke on his DSP93. He had placed a  
> rush order with both DigiKey and JDR (Digikey got there first) for  
> some 40 Meg TTL oscillators and some 74S03's. He swapped out the  
> oscillator and now everything is running fine so far. He reports a  
> little better looking waveform at the oscillator output, and the  
> tendency of the scope probe to load the oscillator and crash the  
> unit is now completely gone. He looked at it with the scope, and  
> reports the waveform is approximately TTL decision levels. He has  
> NOT changed the 74S03, and I suspect it won't be necessary.  
> He had the NTE chip there.  
> Removal amounted to use of conventional regulated soldering iron  
> and some solderwick, and prying the unit up a corner at a  
> time. The +5 pad was the most troublesome to heat.  
> Parts references: DigiKey CTX120-ND for the CTS 40 Meg oscillator,  
> at \$3.25, and DM74S03-ND at \$1.07. There IS a \$5 adder for under a  
> minimum order.  
> Joe estimates his total amount of debugging time since construction  
> to be about 4 hours. A note to greg- He is spending the greater  
> amount of his time on the Mitrex conversion, not this thing.  
> At this time, we feel that the oscillator was his problem, and the  
> effect noted by cooling down the S03 was probably just changing  
> that chips decision threshold just enough to barely respond to  
> a bad input waveform, as opposed to jst barely not respond to it.  
> We also feel that the chances of more than one problem being  
> responsible for the reported cases are fairly high. Others might  
> have something else wrong, creating similar symptoms.  
>  
> I suggested to Greg privately the other day that it might be  
> worth considering to propose that those persons who have the 'heatstroke'  
> phenomenon, who happen to be planning to attend the DCC next  
> month (if this set of individuals exists) bring their DSP93 with  
> them, and that a person be appointed to bring a scope and maybe  
> some parts and tools to someplace near the meeting, and do some  
> testing and troubleshooting of the clock chains of those units to:  
> 1-find out what is going on, and 2-get folks units running.  
> I think that Joe could possibly volunteer some time, maybe I could  
> also, and I do have a 50 Meg scope, maybe someone around DFW might  
> have a faster one. Anyhow Joe liked that idea. As of this writing,  
> THERE ARE NO COMMITTED PLANS TO DO THIS. It is just an idea.  
>  
> 73 de Bob  
>  
> Robert B. Morgan  
> WB5AOH  
> Austin, Texas  
> morganb@tenet.edu  
>  
>

## 283. Re: [DSP-93:1504] What a day!!

From: Carol Byers <crlbyers@garlic.com>  
Date: Fri, 25 Aug 1995 16:10:37 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950825160948.22764D-100000@garlic.com>  
Rendered body type: text/plain

Hi Dave,

Glade to hear the 736r is repaired...congrat's.

Carol, W9HGI

---

## 284. to:Carol W9HGI re:WA5VMS

From: Bob Morgan <morganb@tenet.edu>  
Date: Fri, 25 Aug 1995 22:04:20 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508260304.WAA17846@beall.tenet.edu>  
Rendered body type: text/plain

Carol-

This story is spread over the following dsp-93 mailings:  
1455, 1456, 1457 and 1463. A quick recap is that Joe saw an oscillator output that swung between over 2 volts, to over 4 volts, which isn't close to TTL decision levels, and had a cruddy looking waveform. My unit, apparently unafflicted, is swinging the whole range from slightly negative (probably undershoot) to about 4.5v. After he changed the oscillator, his waveform cleaned up and approximated TTL.

Later info is that he does still have a problem making the speed switch, and is engaged in troubleshooting that now. We are suspecting more than one problem, and he may mess around and find it before it is all over. Stay tuned.  
73 de Bob

Robert B. Morgan  
WB5A0H  
Austin, Texas  
morganb@tenet.edu

---

## 285. Build Update 26 August 1995

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 26 Aug 1995 21:03:58 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d01ac6581656e58@[204.181.160.74]>  
Rendered body type: text/plain

DSP-93 Build Update  
June '95 Production

Updated: 26 August 1995

We will issue updates to the build process as the situation warrants. The latest update will be posted to the dsp-93 mailing list and will be available on ftp.tapr.org in the directory /tapr/dsp93/updates.

-----  
Be sure to visit the TAPR Web pages at <http://www.tapr.org/tapr/>  
-----

You can get copies of all past messages distributed on the dsp-93@tapr.org list by sending mail to 'listserv@tapr.org', subject of 'list', message of 'index dsp-93'. This message will request a listing of all files in the dsp-93 mail archive. To then request a specific month, send mail again to 'listserv@tapr.org', subject of 'request', message of 'request dsp-93 filename', where filename is the name of the file in the dsp-93 area you want to request (i.e. nov.94). These archives are also available on the TAPR Web pages.

----- HERE'S YOUR CHANCE TO HELP THE GROUP -----

As you interface your DSP-93 to your radio, etc., how about writing up your experiences, procedures, problems, etc. Post your results and we'll collect them.

What additional would you like to see in the Operations Manual? Let me know and I'll sign you up for a section or two.



-----  
-----  
August 26th, 1995 Update Section

Documentation Updates  
-----

\* C212 and C213 are reversed in the Assembly Manual on pages 2 and 17. The schematic is correct and the silk screen on the PCB is correct.

C212 = 47 pF

C213 = 22 pF

If you are not having problems currently with the DSP-93 serial port, this may not affect you unless you use baud rates higher than 19200. If you are having problems, or if you are still building the kit, reverse C212 and C213.

Be especially careful with the crystal and the Startech UART and static.

\* Ignore the "Correction to Back Panel Silkscreen" paragraph on page 27 of the Assembly Manual. The June production Back Panels do not have icons for the Power and Speaker connectors. Thus they cannot be incorrect!

-----  
July 27th, 1995 Update Section

Interfacing the DSP-93 to your TNC  
-----

The diagram on the bottom of page 35 of the Assembly Manual should be considered as the desired end result of your connections between the DSP-93 and the TNC Modem Disconnect Header. While most TNC Modem Disconnect Headers are similar, they are not all exactly alike. There may be traces on the PCB shorting pins together and there may be slip-on shorting jumpers on the top of the Header. I hope no manufacturer put shorting traces on the top of the PCB under the header.

Be sure to shield the cable between the DSP-93 Interface Port connector (DB-25) and your TNC. Connect to Ground (pin 15) on the Modem Disconnect Header.

I will begin collecting information on various TNC Modem Disconnect Headers. If you are using a TNC which is not on the list below, please send me the relevant data.

MFJ-1270B (Thanks to Ron Parsons W5RKN)

The 1270B comes with slip-on shorting jumpers between 1-2, 11-12, 13-14, 17-18. There are traces on the PCB between 3-4, 5-6-10-9, and 19-20 (the latter trace needs to be cut).

Short pins 11-12 and 13-14 on the Modem Disconnect Header (MDH) connector.

Make a shielded cable with the following connections:

| MDH | Signal | DB-25 (male) |
|-----|--------|--------------|
| 1   | _DCD_  | 1            |
| 5   | _PTT_  | 3            |
| 15  | _GND_  | 8            |
| 17  | RXD    | 9            |
| 19  | TXD    | 10           |

MFJ-1270C (Thanks to Mark L. Hammond KC4EBR)

The MFJ-1270C is the same as the 1270B except that pins 1 and 2 are shorted with a trace on the PCB rather than with a shorting jumper. Leaving this shorting trace appears to do no harm and makes the DCD light on the TNC active.

PacComm TNC-NB96 or TINY-2 (Thanks to Paul Evans, W4/G4BKI)

The traces between pins 1-2 and 17-18 on the PCB need to be cut to free up the TNC from the on-board modem.

To attach to the AUX MDH on the back of the TNC-NB96. You need to break open 1-2 and 17-18 on that header too! The board designer must have gone a little nuts that day and left the cross jumps in! Otherwise the wiring is identical to that on p35 of the DSP-93 Assembly Manual.

Make a screened (note that G4 call) cable with the following connections:

| MDH | Signal | DB-25 (male) |
|-----|--------|--------------|
| 1   | _DCD_  | 1            |
| 5   | _PTT_  | 3            |
| 15  | GND    | 8            |
| 17  | RXD    | 9            |
| 19  | TXD    | 10           |

By the way, looking into the AUX connector on the TNC-NB96, the pin 1 is in the bottom left corner, so looking into the AUX connector, it looks the same as looking down on the J5 MDH in a "normal" TNC.

The TINY-2 does not have an AUX connector. J5 is the MDH (modem disconnect header) onto which the external modem is hooked. Pin 1 is identified by a square box on the silk screen side of the board and by a square solder pad on the solder side.

#### Documentation Updates

-----  
On Assembly Manual, page 22, Volume Control, in the 4th paragraph, change:  
Connect the wire from the square pad (towards the front of the PCB next to the dot) of R234 to terminal 1 (square pad)  
to:  
Connect the wire from the square pad (towards the front of the PCB next to the dot) of R234 to terminal 1.

On Assembly Manual, page 23, Board 2 Initial Check, in the 6th paragraph, change:  
You also need to inspect carefully the top of the board Now check the analog +5 volts by checking the voltage between ground and the square pad of C233.  
to:  
You also need to inspect carefully the top of the board Now check the analog +5 volts by checking the voltage between ground and the square pad of C227.

On Assembly Manual, page 30, first paragraph, change:  
For easy triggering, an oscilloscope can be connected to J203 pin 10 to monitor the output voltage level.  
to:  
For easy triggering, an oscilloscope can be connected to JP203 pin 10 to monitor the output voltage level.

On schematic A/D Section [1 of 5], REV. 02/08/95, the designations for pins 4 and 8 of U209A are interchanged. Pin 8 is +5 V ALG while pin 4 is -5 V ALG.

-----  
July 14th, 1995 Update Section

#### Documentation Update

-----  
Ignore the item "Note to users of Icom Transceivers ..... 36" in the Table of Contents on page 1 of the Assembly Manual. This item is not relevant to this production build. The item was left over from a previous build.

SRAM chip type

The SRAM chips being sent out may be labeled HP93C9509 M628032-20PSI. These replace the SRAMs listed as 71256S20TP in the Assembly Manual.

#### RESET solder pads clarification

Solder one end of each wire in the two holes located next to (to the right of) the word RESET near the upper right corner of board one

#### June 30th, 1995 Update Section

##### Documentation Update

The June 1995 DSP-93 distribution ships with Version 2.17 of the EPROM. For Version 2.17 of the EPROMs, several documents on the distribution diskettes have been updated and their content included in a new document "Programming Guide for the DSP-93". The documents MONITOR.DOC, MEM-93.DOC, and MONMEM.DOC are now obsolete. Also the comment in MONITOR.INC about the SIN/COS table is an anachronism and should be ignored for Monitor Version 2.17.

The new document "Programming Guide for the DSP-93" is available at ftp.tapr.org in the tapr/dsp93/manuals directory with the name ProgGuide.word. The file is in Microsoft Word format.

There are also several other documents currently in the same directory.

|                             |                                  |
|-----------------------------|----------------------------------|
| DSP93_Interface_Win_Man.pdf | The D93WE PSR article            |
| DSP93_Assm_Man.pdf          | The current Assembly Manual      |
| DSP93_Ops_Manual.pdf        | The new DSP-93 Operations Manual |

pdf documents are in the Adobe portable document format. Freeware reader installers for this document format are available at:

See ftp://ftp.tapr.org/tapr/utls/ACROREAD.EXE for Windows.  
See ftp://ftp.tapr.org/tapr/utls/Acrobat\_Reader\_installer.hqx for MacOS.

See ftp://ftp.adobe.com/pub/adobe/Acrobat/Windows/acroread.exe for PCs.  
See ftp://ftp.adobe.com/pub/adobe/Acrobat/Macintosh/2.0.1/AcroRead.mac.sit or  
ftp://ftp.adobe.com/pub/adobe/Acrobat/Macintosh/2.0r3/AcroRead.sea.bin  
for MacOS depending on which version you want.

#### Monitor Version 2.17 Programs in EPROM

The programs in Monitor Version 2.17 have been updated from Version 2.16. The new program list follows. Where the name of the mnemonic differs from the .OBJ filename, the filename follows the mnemonic.

|                     |               |
|---------------------|---------------|
| 1-SCOPE             | D93SCOPE.OBJ  |
| 2-SPECTRUMANALYZER  | D93SPEC.OBJ   |
| 3-FUNCTIONGENERATOR | D93FUNC.G.OBJ |
| 4-CW_93D            |               |
| 5-HFU_93X           |               |
| 6-HF_93A            |               |
| 7-HF_93AE           |               |
| 8-MEMTEST           |               |
| 9-PKTP1             |               |
| A-PKTP2             |               |
| B-PSKP1             | PSK93R1J.OBJ  |
| C-PSKP2             | PSK93R2J.OBJ  |
| D-PSK_93T2          |               |
| E-PSK_93P2          |               |
| F-APT_93B           |               |
| G-TESTANIN          |               |
| H-TESTBUZZ          |               |
| I-TESTLEDS          |               |
| J-TESTPORT          |               |
| K-TESTRAMP          |               |
| L-FSKISIP1          | FSK93K1.OBJ   |
| M-FSKISIP2          | FSK93K2.OBJ   |
| N-FSK15P1           | FSK93U1.OBJ   |
| O-FSK18P1           | FSK93U1B.OBJ  |
| P-FSK15P2           | FSK93U2.OBJ   |

Q-FSK18P2                      FSK93U2B.OBJ  
R-HF\_93HT  
S-HF\_93HTE  
T-HF\_MODEM

#### Power Supply Balancing

-----  
After both boards have been completed and assembled together, and the "DSP-93 Final Check" on page 25 of the Assembly Manual has been completed, perform a quick check of the balance of the two power supplies. Both +5V supplies on the two boards contribute to the +5V digital power planes. If the two regulators (VR100 and VR201) have significantly different regulating voltages, one of the regulators will carry more than its share of the load. The voltage across the two 0.22 ohm resistors (R107 and R210) should be APPROXIMATELY equal (within a factor of two). Somewhere in the range of 50-90 mV is about right. Should the balance be way off (the voltage across one of them zero, say), please post a message on the dsp-93 mail list and we will work out a solution.

#### Testing DSP-93 RAM memory

-----  
When performing "Test 3: Memory Test" on page 29 of the Assembly Manual, you should test both banks of RAM memory. Both RAM banks can be tested by issuing the 'T' command in slow mode (i.e., after a reset) and again in fast mode (i.e., after a 'G' command). RAM U104-U107 is tested in slow mode and RAM U108-U111 is tested in fast mode.

#### Error in Test 8 instructions

-----  
When performing "Test 8: TESTANIN" on page 32 of the Assembly Manual using DOS, enter the command 'DSPLOAD TESTANIN' instead of 'DSPLOAD TESTANIN.OBJ'.

#### Error in Test 9 instructions

-----  
When performing "Test 9: TESTPORT" on page 32 of the Assembly Manual using DOS, enter the command 'DSPLOAD TESTPORT' instead of 'DSPLOAD TESTPORT.OBJ'.

#### Correction to TNC Modem Disconnect Header Signal

-----  
On page 35 of the Assembly Manual, the signal on pin 6 of TNC Modem Disconnect Header should be TRANSMITTER KEY INPUT rather than NO CONNECTION.  
  
-----

Ron W5RKN

also:  
rparsons@bga.com

---

## 286. Re: [DSP-93:1509] to:Carol W9HGI re:WA5VMS

From: Carol Byers <crlbyers@garlic.com>  
Date: Sun, 27 Aug 1995 15:47:30 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950827154429.20124B-100000@garlic.com>  
Rendered body type: text/plain

Bob,

It sounds like the problem could be related to vendor parts...maybe when you isolate it, you should have everyone send you their units parts date code, and mfg.

Carol

On Fri, 25 Aug 1995, Bob Morgan wrote:

```
> Carol-
> This story is spread over the following dsp-93 mailings:
> 1455, 1456, 1457 and 1463. A quick recap is that Joe saw an oscillator
> output that swung between over 2 volts, to over 4 volts, which isn't
> close to TTL decision levels, and had a cruddy looking waveform.
> My unit, apparently unaffected, is swinging the whole range from
> slightly negative (probably undershoot) to about 4.5v. After he changed
> the oscillator, his waveform cleaned up and approximated TTL.
>
> Later info is that he does still have a problem making the speed switch,
> and is engaged in troubleshooting that now. We are suspecting more than one
> problem, and he may mess around and find it before it is all over.
> Stay tuned.
> 73 de Bob
>
> Robert B. Morgan
> WB5AOH
> Austin, Texas
> morganb@tenet.edu
>
>
```

---

## 287. DSP-93 Block Diagrams

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 29 Aug 1995 17:52:22 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac6949c1b29a@[204.96.0.131]>  
Rendered body type: text/plain

I threw together block diagrams to the two DSP-93 boards. They may be found at:

```
ftp://ftp.tapr.org/tapr/dsp93/schems/Analog_Block_Header.EPS
ftp://ftp.tapr.org/tapr/dsp93/schems/Analog_Block_Header.ps
ftp://ftp.tapr.org/tapr/dsp93/schems/Digital_Block_Diagram.EPS
ftp://ftp.tapr.org/tapr/dsp93/schems/Digital_Block_Diagram.ps
```

This is my first experiment exporting EPS or PostScript files off the Mac platform. The files were converted to DOS file format. Please try to print these.

Perhaps Greg can make a pdf file from them.

Feedback please.

Ron W5RKN

also:  
rparsons@bga.com

---

## 288. Where is the W9GR filter set I read about in the PSR???

From: "Bob Smith" <bsmith@msn.com>  
Date: Wed, 30 Aug 95 00:55:56 UT  
To: "'DSP-93 (MSN)'" <dsp-93@tapr.org>  
Message-ID: <UPMAIL01.199508300056000084@msn.com>  
Rendered body type: text/plain

Where is the W9GR filter set I read about in the PSR???

Can't find it at  
the FTP site.

Thanks in advance.

---

## 289. Re: [DSP-93:1513] Where is the W9GR filter set I read about in the PSR???

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 30 Aug 1995 01:19:02 +0000  
To: dsp-93@tapr.org  
Message-ID: <199508300116.VAA18495@camel.campbell.edu>

Rendered body type: text/plain

Bob,

The porting of the W9GR audio filter code is still not available for release. The person doing the porting of the code, Mike, N4IRR, has not polished it off yet.

Mike, are you out there??

At 20:10 8/29/95 -0500, you wrote:

>Where is the W9GR filter set I read about in the PSR???

>

>Can't find it at

>the FTP site.

>

>Thanks in advance.

>

>

>

Mark L. Hammond [KC4EBR]

---

## 290. Re: DSP-93 Block Diagrams

From: "bba" <bba@ne.dk>

Date: Wed, 30 Aug 95 14:39:17 dst

To: dsp-93@tapr.org

Message-ID: <9507308098.AA809818757@smtplink.ne.dk>

Rendered body type: text/plain

To Ron W5RKN:

> Feedback please.

I have downloaded and printed the block diagrams: The block diagram of the digital section printed without problems, the .eps file in portrait mode and the .ps file in landscape mode.

The block diagrams for the analog section were different: the .eps file again printed in portrait mode, but was cropped. The .ps file is truncated and prints only partially.

One thing you should bear in mind: outside North America we use A4 size paper which is a little taller but narrower than your 8 1/2 by 11 (A4 is 210 x 297 mm, 8 1/2 by 11 is 216 x 279 mm.) Printing too close to the margins - as is done with the analog section - results in cropping when printed on A4 size paper.

Best 73 de Bent/OZ6BL

(oz6bl@amsat.org)

---

## 291. [DSP-93:1512] DSP-93 Block Diagrams

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@vm.gmd.de>

Date: Wed, 30 Aug 95 15:39:00 EST

To: <dsp-93@TAPR.ORG>

Message-ID: <199508301339.IAA06119@sys1.tapr.org>

Rendered body type: text/plain

Feedback to Ron and Bent

I have downloaded and printed the analog and digital block diagrams in postscript format. The top text on the analog board printed 12 mm (about 1/2 inch) from the left margin on A4 size paper. The text is U203 U201-U202A . I am not aware of missing any part. The text was printed by : copy analog\_B.ps prn  
My printer is HP LaserJet 4.

I used NETSCAPE 1.1 for the transfer and noted that both the digital files had the same name, probably due to truncation. Should the name in the ftp server be made shorter?  
What is the EPS format? Some extended postscript?

Boris Smeds DJ0EX SM0GJ

## 292. Re: [DSP-93:1515] Re: DSP-93 Block Diagrams

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 30 Aug 1995 09:39:30 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac6a26448113@[204.96.0.129]>  
Rendered body type: text/plain

Bent and Boris,

Thanks for your comments. EPS is encapsulated PostScript, the base file format for the graphics program I used (Illustrator).

Both formats should be printed in landscape mode. Can't you override the orientation of the printed output?

I was aware of the A4 situation and the largest diagram (Analog) is all within 195 mm from the left edge (as viewed in portrait mode). What part of the image did you lose? The "bottom" part is just title and copyright.

Bent, you say "The .ps file is truncated and prints only partially." Are you saying the file is truncated or that the printing was truncated?

Boris, I'll check out the Netscape name problem. I can always shorten the names.

Ron

>To Ron W5RKN:  
>  
>  
>> Feedback please.  
>  
>I have downloaded and printed the block diagrams: The  
>block diagram of the digital section printed without  
>problems, the .epr file in portrait mode and the .ps  
>file in landscape mode.  
>  
>The block diagrams for the analog section were  
>different: the .eps file again printed in portrait  
>mode, but was cropped. The .ps file is truncated and  
>prints only partially.  
>  
>One thing you should bear in mind: outside North  
>America we use A4 size paper which is a little taller  
>but narrower than your 8 1/2 by 11 (A4 is 210 x 297  
>mm, 8 1/2 by 11 is 216 x 279 mm.) Printing too close  
>to the margins - as is done with the analog section -  
>results in cropping when printed on A4 size paper.  
>  
>  
>Best 73 de Bent/OZ6BL  
>  
>(oz6bl@amsat.org)  
>

>Feedback to Ron and Bent  
>I have downloaded and printed the analog and digital block  
>diagrams in postscript format. The top text on the analog board  
>printed 12 mm (about 1/2 inch) from the left margin on A4 size paper.  
>The text is U203 U201-U202A . I am not aware of missing any part.  
>The text was printed by : copy analog\_B.ps prn  
>My printer is HP LaserJet 4.  
>  
>I used NETSCAPE 1.1 for the transfer and noted that both the digital  
>files had the same name, probably due to truncation. Should the name  
>in the ftp server be made shorter?  
>What is the EPS format? Some extended postscript?  
>  
>Boris Smeds DJ0EX SM0GJ  
>  
>End of Message

Ron W5RKN

also:  
rparsons@bga.com

---

## 293. [DSP-93:1517] Re: DSP-93 Block Diagrams

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@vm.gmd.de>  
Date: Wed, 30 Aug 95 17:08:51 EST  
To: <dsp-93@TAPR.ORG>  
Message-ID: <199508301509.KAA07550@sys1.tapr.org>  
Rendered body type: text/plain

Ron

I have now printed both the .ps and .eps files on A4 size paper.  
The .eps files print in portrait mode, the .ps prints in landscape.  
The only file that spills over is the analog\_b.ps. Top left  
shows D Aud, RD Aud, etc...  
The right part goes to U209B.

I do not know how to override the paper orientation.  
Boris DJ0EX SM0GJ

End of Message

---

## 294. Re: [DSP-93:1517] Re: DSP-93 Block Diagrams

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 30 Aug 1995 10:26:50 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac6a3307804a@[204.181.160.91]>  
Rendered body type: text/plain

For those without PostScript printers, I have uploaded the two block diagrams in GIF format (150 dpi). The quality is not as good but they are readable. Remember, landscape mode.

[ftp://ftp.tapr.org/tapr/dsp93/schems/Analog\\_Block.GIF](ftp://ftp.tapr.org/tapr/dsp93/schems/Analog_Block.GIF)  
[ftp://ftp.tapr.org/tapr/dsp93/schems/Digital\\_Block.GIF](ftp://ftp.tapr.org/tapr/dsp93/schems/Digital_Block.GIF)

For you Netscape users, until I get the names shortened, look at the URL for the full file name.

Ron W5RKN

also:  
[rparsons@bga.com](mailto:rparsons@bga.com)

---

## 295. More DSP-93 Block Diagrams

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 30 Aug 1995 14:03:24 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02120d00ac6a65ce6e6d@[204.96.0.133]>  
Rendered body type: text/plain

The following is from an e-mail exchange between Boris and myself, but I thought the information was of a nature that would benefit the whole group. Hence ...

>Ron, sorry my note was incorrect. it is only the analog eps file that  
>spills over, because it prints in portrait. I get the full pictures  
>with the .ps files. I did find a line in the .ps files  
>that specifies portrait to the printer. I did not see a similar  
>instruction in the .eps files.  
>  
>I never opened the files from an application, only copied them  
>directly to the printer with a DOS command: copy filename.ext prn

Yes, PostScript files are made to be just sent to a PostScript printer. That is not the case with EPS files. They are editable incarnations of PostScript-like objects. They are NOT intended to be sent directly to a printer. For example, the application Illustrator is an EPS "editor".

>I thought postscript files were intended directly for the printer.  
>don  
>My Word 2.0 will only open it as a text file, not as an image.

But if you have opened the EPS file in Illustrator, you could copy the image and paste it into Word as a graphic. There you could re-size it, etc.

>The only improvement needed for us with European paper would be to  
>leave more top margin on the landscape format. The paper holes  
>for filing will almost go into the image.



>I have not checked how much I can print. For filing a one inch margin  
>would be fine

Good info.

>The analog.ps prints in landscape with 12 mm to the top of the  
>paper and 20 mm to the bottom.  
>Left side has 33 mm free, right side has 27 mm free margin.

Thanks

>A last comment. The acronym WDT on the digital board is unknown to me.

Watch Dog Timer. It's use has not been documented but a program running in the DSP-93 could watch the clock, and if nothing happened after a certain time, and you had one of the WDT jumpers installed, could use that port to reset the DSP-93.

>Thanks for your nice kit, I have finished the assembly and look forward  
>to do some programming later. My normal work is with satellite ground  
>systems for the European Space Agency. It is more an office type  
>technical paper work.  
>Regards, Boris  
>  
>End of Message

Ron W5RKN

also:  
rparsons@bga.com

---

## 296. Re: [DSP-93:1520] More DSP-93 Block Diagrams

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 30 Aug 1995 14:50:46 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199508301950.0AA30762@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to Ronald G. Parsons:

> Yes, PostScript files are made to be just sent to a PostScript printer.  
> That is not the case with EPS files. They are editable incarnations of  
> PostScript-like objects. They are NOT intended to be sent directly to a  
> printer. For example, the application Illustrator is an EPS "editor".  
>  
> >I thought postscript files were intended directly for the printer.  
> >My Word 2.0 will only open it as a text file, not as an image.  
>  
> But if you have opened the EPS file in Illustrator, you could copy the  
> image and paste it into Word as a graphic. There you could re-size it, etc.

There are lots of programs that allow you to do this, includeing PageMaker, MS Word, Coral Draw, and the list goes on. There are also lots of utilities that will take an EPS file and translate it to various specs.

That is one of the advantages for using EPS (which is a meta-language for printers).

> >The only improvement needed for us with European paper would be to  
> >leave more top margin on the landscape format. The paper holes  
> >for filing will almost go into the image.  
> >I have not checked how much I can print. For filing a one inch margin  
> >would be fine  
>  
> >A last comment. The acronym WDT on the digital board is unknown to me.  
>  
> >Thanks for your nice kit, I have finished the assembly and look forward  
> >to do some programming later. My normal work is with satellite ground  
> >systems for the European Space Agency. It is more an office type  
> >technical paper work.

Thanks for the note here Boris.

Cheers - Greg, WD5IVD

---

## 297. Re: DSP-93 Block Diagrams

From: Kok Chen <kchen@apple.com>  
Date: Wed, 30 Aug 95 17:54:39 -0700  
To: dsp-93@tapr.org

Message-ID: <9508310054.AA01157@apple.com>

Rendered body type: text/plain

A4 paper is only 8.3 inches wide. And, some printers may have a larger unprintable margins than others.

As a quick fix, you might add a PostScript line like:

0.95 dup scale

to the beginning of the PostScript file (but after the %!PS header stuff).

73,

Kok Chen, AA6TY  
Apple Computer, Inc.

kchen@apple.com

---

## 298. Re: [DSP-93:1522] Re: DSP-93 Block Diagrams

From: w5rkn@amsat.org (Ronald G. Parsons)

Date: Wed, 30 Aug 1995 20:45:28 -0500

To: dsp-93@tapr.org

Message-ID: <v02130501ac6ac4556f9c@[204.96.0.48]>

Rendered body type: text/plain

Kok,

Thanks, but in a note from Boris, he says the ps files all print fine on A4. The problem he has was in sending the EPS files to a printer directly.

Ron

>A4 paper is only 8.3 inches wide. And, some printers may have a  
>larger unprintable margins than others.

>

>As a quick fix, you might add a PostScript line like:

>

>0.95 dup scale

>

>to the beginning of the PostScript file (but after the %!PS header  
>stuff).

>

>73,

>

>Kok Chen, AA6TY

kchen@apple.com

>Apple Computer, Inc.

Ron W5RKN

also:

rparsons@bga.com

---

## 299. Block Diagrams PS print

From: Bob Morgan <morganb@tenet.edu>

Date: Thu, 31 Aug 1995 21:09:48 -0500 (CDT)

To: dsp-93@tapr.org

Message-ID: <199509010209.VAA24682@Gayle-Gaston.tenet.edu>

Rendered body type: text/plain

Well everybody else had such good results just throwing the .ps file at their printer I decided to ftp the files and give it a try. I have a brand new (rebuilt=its cheaper) HP LaserJet 4L that I have been pretty well pleased with otherwise. Its about half as tall as a HP LJ 4, and about half the cost and the local Dell factory store sells nice rebuilt units for about \$100 or more less than the discounters, so I gave it a try. All I got out of it was a multipage text printout that looked like the text of the file, and I cringed at the amount of precious toner I saw going up the spout on that little experiment. The manual for that thing doesn't mention Post-Script by name, but did have a couple of PS fonts (which I assume is not the same thing now). It does have HP PjL and HPGL and I have printed some nice schematics with it with other programs. But this one fell flat.

Any conversion software out there that will convert to anything else like maybe HPGL or other things?

73 de Bob

Robert B. Morgan  
WB5A0H  
Austin Texas  
morganb@tenet.edu

---

### 300. Re: [DSP-93:1524] Block Diagrams PS print

From: Kok Chen <kchen@apple.com>  
Date: Thu, 31 Aug 95 20:10:33 -0700  
To: dsp-93@tapr.org  
Message-ID: <9509010310.AA05391@apple.com>  
Rendered body type: text/plain

Bob Morgan, WB5A0H <morganb@tenet.edu> writes:

> I have a brand new (rebuilt=its cheaper) HP LaserJet 4L that I have  
> been pretty well pleased with otherwise. Its about half as tall as  
> a HP LJ 4, and about half the cost and the local Dell factory store  
> sells nice rebuilt units for about \$100 or more less than the discounters,  
> so I gave it a try. All I got out of it was a multipage text printout  
> that looked like the text of the file, and I cringed at the amount of  
> precious toner I saw going up the spout on that little experiment.

Unless you buy the "M" versions of the LaserJet line of printers,  
PostScript is usually an option you have to pay extra for. The PostScript  
and Mac -ready version of the LaserJet 4L is known as the LaserJet 4ML.

As a last resort, you might want to try copy stores like Kinkos.  
Most of their stores have PostScript printers and PeeCeess and Macintoshes  
you can rent time on.

73

Kok Chen, AA6TY  
Apple Computer, Inc.

kchen@apple.com

---

# September 1995

Original source file: dsp.9509

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/dspsig/mail\\_archive/dsp.9509](http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9509)

## 1. (Fwd) [DSP-93:1430] dspload for Linux

From: "Jim Lynch" <k4gvo@america.net>  
Date: Thu, 31 Aug 1995 05:26:08 +0000  
To: dsp-93@tapr.org  
Message-ID: <199509010936.JAA03887@america.net>  
Rendered body type: text/plain

----- Forwarded Message Follows -----  
Date: Thu, 17 Aug 1995 19:48:30 -0500  
Reply-to: dsp-93@tapr.org  
From: "Jim Lynch" <k4gvo@america.net>  
To: dsp-93@tapr.org  
Subject: [DSP-93:1430] dspload for Linux

I sent the following message a couple of weeks ago and got zip response, so I decided that either there was no interest or my mail got lost. So I uploaded the file, dspload.linux.tar, to /tapr/dsp93/upload on ftp.tapr.org. Someone will move it to its proper place I assume. I now am re-announcing it. Will someone else please try it and see if it works? It works for me, but it's a real stretch to assume that it works for everyone.

Thanks and 73,  
Jim.

Ok, Guys,

I finally broke down and did something for this group, I hope. I ported dspload to Linux. Someone else grab it from atll.america.net /pub/users/k4gvo/dsplinux.tar. and see if it works for them.

Included is the source, dspload.c, a sample .cfg file and an executable binary. I compiled it via:  
make dspload.  
Be sure to edit the .cfg file and set the port to the correct com port. My dsp-93 is hooked to COM1 which is /dev/ttyS0. I'm running a Debian 0.93 release. I think the com ports are sometimes different for different distributions, so if it doesn't work for you, be sure you've got the right com port. Also be sure you aren't running any other comm software. This version doesn't check or set any locks, so CAVEAT EMPTOR as usual. Did I spell that right? My latin was way back there. Shortly after Rome fell.

Please let me know how it works. I am going to be out of town all next week, so if you don't get a response next week, I'll be back. (Arnie sure made that one famous. Doesn't have the same meaning as it used to.)

Enjoy, I hope it works.

73,  
Jim.  
Jim Lynch                      Fayetteville, GA              K4GVO  
'86 GL1200I                  k4gvo@america.net              44.36.34.20  
Jim Lynch                      Fayetteville, GA              K4GVO  
'86 GL1200I                  k4gvo@america.net              44.36.34.20

## 2. Re: [DSP-93:1525] Re: Block Diagrams PS print

From: "Jim Lynch" <k4gvo@america.net>  
Date: Fri, 1 Sep 1995 05:41:17 +0000  
To: dsp-93@tapr.org  
Message-ID: <199509010946.JAA04068@america.net>  
Rendered body type: text/plain

> Date: Thu, 31 Aug 1995 22:23:39 -0500  
> Reply-to: dsp-93@tapr.org  
> From: Kok Chen <kchen@apple.com>  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:1525] Re: Block Diagrams PS print

> Bob Morgan, WB5AOH <morganb@tenet.edu> writes:  
>

> > I have a brand new (rebuilt=its cheaper) HP LaserJet 4L that I have  
> > been pretty well pleased with otherwise. Its about half as tall as  
> > a HP LJ 4, and about half the cost and the local Dell factory store  
> > sells nice rebuilt units for about \$100 or more less than the discounters,  
> > so I gave it a try. All I got out of it was a multipage text printout  
> > that looked like the text of the file, and I cringed at the amount of  
> > precious toner I saw going up the spout on that little experiment.  
>  
> Unless you buy the "M" versions of the LaserJet line of printers,  
> PostScript is usually an option you have to pay extra for. The PostScript  
> and Mac -ready version of the LaserJet 4L is known as the LaserJet 4ML.  
>  
> As a last resort, you might want to try copy stores like Kinkos.  
> Most of their stores have PostScript printers and PeeCeess and Macintoshes  
> you can rent time on.  
>  
> 73  
>  
> Kok Chen, AA6TY kchen@apple.com  
> Apple Computer, Inc.  
>

I run ghostscript on Linux to drive my ancient HP Lj II. It works  
great for postscript files.

Jim.  
Jim Lynch Fayetteville, GA K4GVO  
'86 GL1200I k4gvo@america.net 44.36.34.20

---

### 3. Another one up and running!

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Fri, 1 Sep 1995 11:46:16 GMT  
To: dsp-93@tapr.org  
Message-ID: <199509011146.9974.0@getafix>  
Rendered body type: text/plain

I finally got the time to warm up the iron and build the kit. It  
took 2 evenings, about 2.5 hrs each board. Last night I  
populated the chips and connected it up to the computer, and it  
came up first time and runs all the tests ok. Thanks for a great  
product.  
John Melton, g0orx/n61yt (DSP-12 soon for sale!)

---

### 4. Re: [DSP-93:1524] Block Diagrams PS print

From: Jim Neely <jneely@eden.com>  
Date: Fri, 1 Sep 1995 08:00:32 CDT  
To: dsp-93@tapr.org  
Message-ID: <199509011301.IAA29659@matrix.eden.com>  
Rendered body type: text/plain

Bob,

I think PS means proportional spacing in this case. I think it takes a Post  
Script cartridge to do what you are trying to do.

Good Luck...jn

\*\* Reply to note from Bob Morgan <morganb@tenet.edu> 08/31/95 9:14pm -0500

> The manual for that thing doesn't mention Post-Script by name, but did  
> have a couple of PS fonts (which I assume is not the same thing now).  
> It does have HP PjL and HPGL and I have printed some nice schematics  
> with it with other programs. But this one fell flat.  
>  
> Any conversion software out there that will convert to anything else  
> like maybe HPGL or other things?  
>  
> 73 de Bob  
>  
> Robert B. Morgan  
> WB5A0H  
> Austin Texas  
> morganb@tenet.edu

Jim Neely  
jneely@eden.com wa5lhs@tapr.org

## 5. dspload.linux.tar relocated

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Fri, 1 Sep 1995 10:29:35 -0400  
To: dsp-93@tapr.org  
Message-ID: <v01530500ac6c91937149@[152.38.1.2]>  
Rendered body type: text/plain

Hi Jim and others,

I have moved Jim's DSP-93 loader program for Linux to a new directory on the site. It resides under:

/u1/home/ftp/tapr/dsp93/software/linux/dspload.linux.tar

Thanks for the porting, Jim. If I get a chance to take my Linux box home this weekend, I will report to you. Wish it was a laptop, now ;-)

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 6. TPRS modem file

From: Bob Morgan <morganb@tenet.edu>  
Date: Fri, 1 Sep 1995 09:49:57 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199509011449.JAA11300@Joyce-Perkins.tenet.edu>  
Rendered body type: text/plain

This one probably attention Frank-

Joe WASVMS called the other day and he had the FSK modem up and running, so he loaded the TPRS modem to see what it would do. He reported that the DCD led didn't work. When I read the program, I didn't even see any carrier detect LOGIC, much less any LED assignment. Did this program get picked before it was ripe? Or is there a later version?

A long time ago I converted my TNC2 and lookalikes with at least part of the DCD mods that TAPR came out with. What I did was to retrofit a couple of transistors and some misc parts, along with unused buffers, to combine the PLL CD output (an energy detector) with the bit 7 lock output of the state machine, and a time constant downstream, for a DCD to drive the SIO. The suggested hookup for the DSP93 to a TNC2 substitutes for this circuitry at pins 1-2 of the MDH, rendering that inoperative. I am thinking of modifying that interface slightly to use the state machine lock output only to drive the SIO, instead of the DCD from the DSP.

I theorise that how well this substitutes for DCD from the DSP93 depends on what the individual dsp modem program(mer) does to create DCD in the first place. I think that the state machine DCD lock would be superior to any energy detector whether analog or DSP derived. Maybe one might want to gate them together under some circumstances. If the DSP has no DCD to begin with (as the TPRS program on the distribution disk) then of course the state machine output would have to be used. If the DSP program(mer) chose to do a first rate job of filtering for a carrier or clock and comparing this with data transitions, it ought to be possible to improve upon what the TNC state machine is doing.

Comments?

Improvements to the program?

73 de Bob (C U at the DCC)

Robert Morgan  
WB5A0H  
Austin Texas  
morganb@tenet.edu

---

## 7. Another one up and running!

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Fri, 1 Sep 1995 17:23:28 GMT  
To: dsp-93@tapr.org  
Message-ID: <199509011723.22575.0@getafix>  
Rendered body type: text/plain

I finally got the time to warm up the iron and build the kit. It took 2 evenings, about 2.5 hrs each board. Last night I

populated the chips and connected it up to the computer, and it came up first time and runs all the tests ok. Thanks for a great product.  
John Melton, g0orx/n6lyt (DSP-12 soon for sale!)

---

## 8. Re: [DSP-93:1527] Re: Block Diagrams PS print

From: Carol Byers <crlbyers@garlic.com>  
Date: Fri, 1 Sep 1995 13:20:48 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950901131938.13491A-100000@garlic.com>  
Rendered body type: text/plain

Hay, that sounds where do I get a copy of the "magic" software package ??

---

## 9. Re: [DSP-93:1531] TPRS modem file

From: fperkins@onramp.net  
Date: Fri, 1 Sep 1995 18:42:55 -0500  
To: dsp-93@tapr.org  
Message-ID: <199509012342.SAA12107@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Bob,

The "DCD" version of the TPRS modem has not been distributed (limited users). Recall that I e-mailed you some weeks ago to say I would customize versions for you and Joe based on your TX and RX polarity.

When the modem sends a + voltage, does your TX go up or down in frequency? When your receiver gets a higher frequency, does the discriminator output go more positive or more negative?

Hopefully you will have this info when we meet at DCC in a few days.

I seem to remember that you or Joe need something unusual on PTT (maybe + voltage vs ground?) I think that W5RKN has worked this out so I will collaborate with him on this point.

73 Frank WB5IPM

---

## 10. HW101 TO DSP93 TO PC for

From: bandy@server.elysian.net (John Bandy)  
Date: Sat, 2 Sep 95 20:40 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0sp42l-000259C@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: HW101 TO DSP93 TO PC for RTTY

Hello one and all,

| DSP93 W/Speaker<br>8 pin mini-DIN | SIGNAL   | 1970's HF Heathkit HW101xcvr<br>Mic Jack | Headphones Jack |
|-----------------------------------|----------|------------------------------------------|-----------------|
| 1                                 | freq dn  |                                          |                 |
| 2                                 | ptt      | ptt                                      |                 |
| 3                                 | aux in   |                                          |                 |
| 4                                 | icom     |                                          |                 |
| 5                                 | td audio | audio                                    |                 |
| 6                                 | gnd      | gnd                                      | gnd             |
| 7                                 | freq up  |                                          |                 |
| 8                                 | rd audio |                                          | audio           |

Do I leave pins 1, 3, 4, & 7 open or ground them?

```
*****Y cable*****
..... MP Jack
DIN.....
..... HP Jack
```

Cannot I run the following software devices w/o a TNC plugged into the DSP93 with the above HF setup?

```
W9GR_93 Voice Filter
CW_93 CW Filter
HOT_HF93 RTTY modem
HF_93U1/2 AMTOR modem
```

If the TNC95 (underdevelopment) goes inside the DSP93 cabinet then will I have to remove the TNC plug on the back or if I plug in an external TNC will the internal TNC95 be electronically switched out?

Will I have to install a switch on the front panel to switch the TNC out when I want to process RTTY/AMTOR signals?

There are two radio DIN's on the DSP93. I assume one is for a VHF rig and the other is for a HF rig. How does the DSP93 know which rig to use when both rigs are turned on?

73'S John W0UT

---

□ OLX 1.53 □ I used up all my sick days, so I'm calling in dead.

---

## 11. Re: [DSP-93:1535] HW101 TO DSP93 TO PC for

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 2 Sep 1995 21:04:37 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac6ebcc0c2a2@[204.96.0.72]>  
Rendered body type: text/plain

>To: dsp-93@tapr.org  
>Subject: HW101 TO DSP93 TO PC for RTTY  
>  
>Hello one and all,  
>  
> DSP93 W/Speaker                      1970's HF Heathkit HW101xcvr  
> 8 pin mini-DIN                      Mic Jack                      Headphones Jack  
>  
>                      1                      freq dn  
>                      2                      ptt                      ptt  
>                      3                      aux in  
>                      4                      icom  
>                      5                      td audio                      audio  
>                      6                      gnd                      gnd                      gnd  
>                      7                      freq up  
>                      8                      rd audio                      audio  
>  
>Do I leave pins 1, 3, 4, & 7 open or ground them?

Leave them open.

>  
>                      \*\*\*\*\*Y cable\*\*\*\*\*  
>                                           ..... MP Jack  
>                      DIN.....  
>                                           ..... HP Jack  
>  
>Cannot I run the following software devices w/o a TNC plugged into  
>the DSP93 with the above HF setup?  
>  
>                      W9GR\_93 Voice Filter  
>                      CW\_93 CW Filter  
>                      HOT\_HF93 RTTY modem  
>                      HF\_93U1/2 AMTOR modem

They do not require a TNC to be connected.

>If the TNC95 (underdevelopment) goes inside the DSP93 cabinet then will  
>I have to remove the TNC plug on the back or if I plug in an external  
>TNC will the internal TNC95 be electronically switched out?

Don't know for sure. But I don't think there will be any automatic switch-out.

>Will I have to install a switch on the front panel to switch the TNC  
>out when I want to process RTTY/AMTOR signals?

No. The TNC port is not used.

>There are two radio DIN's on the DSP93. I assume one is for a VHF rig  
>and the other is for a HF rig. How does the DSP93 know which rig to use  
>when both rigs are turned on?

Usually a modem is specific to one port. E.g. PKTP1 uses radio port 1.



```
>73'S John W0UT
>---
> OLX 1.53 I used up all my sick days, so I'm calling in dead.
>
```

Ron W5RKN

also:  
rparsons@bga.com

---

## 12. new APT and PSK code uploaded

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Tue, 05 Sep 1995 01:29:51 +0000  
To: dsp-93@tapr.org  
Message-ID: <199509050130.VAA15436@camel.campbell.edu>  
Rendered body type: text/plain

Hello All,

Frank, WB5IPM has been busy again! I am pleased to post for him the following two new files under ~tapr/dsp93/upload subdirectory on the tapr ftp site.

new\_psk2.zip  
new\_apt.zip

Below are the .txt files (one for each .zip file) that accompany the updates and explain what each new file is.

```
=====
=====
new_apt.txt
=====
=====
September 4, 1995
```

Here are the APT updates:

|              |                                     |
|--------------|-------------------------------------|
| apt93r1w.obj | same as old apt_93b.obj             |
| apt93r2w.obj | radio port 2 version of apt_93b.obj |
|              |                                     |
| apt93r1a.obj | visible light sync version, port 1  |
| apt93r2a.obj | visible light sync version, port 2  |

The "a" versions now include sync to the 1040 Hz visible light signal. When using IMDISP for display, Now just enter lines = N (400 - 800 typical), samples = 2400, bits = 8 and header = 0. The visible light scan will be centered for viewing (640 x 480). The signal-to-noise needs to be pretty good for the sync to work (LED 1 blinks on sync) so use the "w" versions if you need to get every line of the pass and don't mind manual centering. See the original instructions for other operating hints.

73 Frank WB5IPM

```
=====
=====
new_psk2.txt
=====
=====
September 4, 1995 @ 19:32 CDST
```

We picked up a bug in PSK93X1A/2A.OBJ and PSK93X1B/2B.OBJ that caused them to occasionally false tune when loaded under quiet conditions. Here are the latest (95.09.04) PSK\*.OBJ updates with corrections for the above mentioned code:

ICOM/Kenwood standard (ground-to-tune) PSK modems (AO-16, etc.). Update includes a brighter SmartTune light:

|              |       |          |        |                |
|--------------|-------|----------|--------|----------------|
| PSK93R1K OBJ | 5,003 | 07-29-95 | 11:57a | - radio port 1 |
| PSK93R2K OBJ | 5,003 | 07-29-95 | 11:57a | - radio port 2 |

ICOM/Kenwood weak-signal PSK modem (AO-16, etc.). Update includes a brighter SmartTune light, with the PLL gain increased and tuning interlock disabled to improve lock recapture after a fade:

|              |       |          |        |                |
|--------------|-------|----------|--------|----------------|
| PSK93R1L OBJ | 4,999 | 07-29-95 | 11:57a | - radio port 1 |
|--------------|-------|----------|--------|----------------|

PSK93R2L OBJ            4,999 07-29-95 11:57a - radio port 2

YAESU ground-to-tune standard PSK modems:

PSK93R1Z OBJ            5,003 07-29-95 11:58a - radio port 1  
PSK93R2Z OBJ            5,003 07-29-95 11:58a - radio port 2

YAESU ground-to-tune weak signal PSK modems:

PSK93R1W OBJ            4,999 07-29-95 11:58a - radio port 1  
PSK93R2W OBJ            4,999 07-29-95 11:58a - radio port 2

YAESU 5 V pulse-to-tune standard modems. TX output level tweaked  
for use with the 736 back-panel data jack.

PSK93X1A OBJ            5,060 09-04-95 7:19p - radio port 1  
PSK93X2A OBJ            5,060 09-04-95 7:20p - radio port 2

YAESU 5 V pulse-to-tune weak signal PSK modems, with tweaked TX.

PSK93X1B OBJ            5,056 09-04-95 7:20a - radio port 1  
PSK93X2B OBJ            5,056 09-04-95 7:20p - radio port 2

LED definitions, etc. are the same as the prior PSK release.

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A no cost, non-exclusive license to use the enclosed software is granted to all users of the TAPR/AMSAT DSP-93 DSP computer, with the restriction that it be used only for non-commercial amateur radio applications. ALL other uses are prohibited under this license. Copyright 1991, 1992, 1993, 1994, and 1995, Frank H. Perkins, Jr., WB5IPM. All rights reserved.

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Never use this software under circumstances where its failure to operate or its failure to operate as expected, or the failure of the attendant hardware could create a dangerous situation, cause loss of data, or could cause damage to your amateur radio equipment, computer equipment, or any other equipment or property.

Please contact Greg Jones at TAPR or the author for information on commercial licenses of this software.

Frank H. Perkins, Jr.

Mark L. Hammond [KC4EBR]

---

## 13. Re: DSP-93 Block Diagram files

From: "bba" <bba@ne.dk>  
Date: Tue, 05 Sep 95 15:56:20 dst  
To: dsp-93@tapr.org  
Message-ID: <9508058103.AA810341780@smtplink.ne.dk>  
Rendered body type: text/plain

Ron,

My first download resulted in a analog\_b.ps file that was approx. 35K long. I use the PC version of Netscape 1.1 for download. Copying the file to the printer - which is all I can do with PostScript files - resulted in an error message from the HP Laser Jet 4 printer (ERROR:syntaxerror; OFFENDING COMMAND etc...) after printing approx. the upper third of the page. Whether this was an error during download or what, I cannot tell.

This morning I downloaded the file again and got a 42K file out of it. This file printed without problems - in landscape mode.

I think Boris' comments cover mine as well - I too would like to see a few mm more top margin.

Thanks for the diagrams and the follow-up comments.

73 de Bent/OZ6BL

(oz6bl@amsat.org)

---

## 14. DSP-93 Block Diagrams (Rev)

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 5 Sep 1995 19:44:18 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac729ed8443b@[204.181.160.69]>  
Rendered body type: text/plain

I have revised the block diagrams to the two DSP-93 boards. The change is formatting only. No substantive change. The Analog has more room at the top. They may be found at:

ftp://ftp.tapr.org/tapr/dsp93/schems/Analog\_Block.ps  
ftp://ftp.tapr.org/tapr/dsp93/schems/Digital\_Block.ps

Ron W5RKN

also:  
rparsons@bga.com

---

## 15. Build Questions

From: segbert@primenet.com (segbert)  
Date: Wed, 6 Sep 1995 00:24:42 -0700  
To: dsp-93@tapr.org  
Message-ID: <1121.6457T12T2516@primenet.com>  
Rendered body type: text/plain

Hi Guys:

I am assembling one of the latest build kits. I got concerned in the power supply area of board 2. C225 has a silkscreened polarity marking but takes a monolithic ceramic capacitor, while C216 has no silkscreened polarity marking, but takes an electrolytic, so I buzzed out the area. I discovered that the schematic does not match the boards that I have. (Schematic rev 2/8/95, Board2 rev2 3/1/95, Board1 rev2 3/1/95.

Analog schematic page 5 shows C216, C217, C218, C219, C220, & C221 attached to the net on the regulator side of R210. On the actual board, VR201, pin V0 goes directly and only to R210. ALL the capacitors are on the +5 VDC side of R210. Digital schematic page 3 has a similar defect in that R107 is actually between VR100 and the capacitors. My National Linear data book recommends that "bypass capacitors are recommended for optimum stability and transient response, and should be located as close as possible to the regulator." I think there should probably be a .1 from V0 to GND of VR100 & VR201, before the .22 resistors, and this was the original intent of C217 & C119.

73 de N7XSQ

---

## 16. Build Question

From: segbert@primenet.com (segbert)  
Date: Wed, 6 Sep 1995 00:37:46 -0700  
To: dsp-93@tapr.org  
Message-ID: <402.6457T31T1843@primenet.com>  
Rendered body type: text/plain

On page 18 of the build instructions, under Diodes, it says to install:

D205 1N5817 Fast Recovery Diode  
D201 H5CH1001 or 1N5817  
D202 H5CH1001 or 1N5817

The parts list says:  
3 1N5817 or H5CH1001 D201,D202,D205

The Schematic calls out H5CH1001 for D201 & D202, but 1N5817 for D205.

I got 3 H5CH1001s. Can I use this for D205, or is the specification of only 1N5817 on page 18 significant?

73  
N7XSQ

---

## 17. Re: [DSP-93:1540] Build Questions

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 6 Sep 1995 10:04:17 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130502ac736871a17d@[204.96.0.48]>  
Rendered body type: text/plain

>Hi Guys:

>I am assembling one of the latest build kits. I got concerned in  
>the power supply area of board 2.

I referred your questions [DSP-93:1540] & [DSP-93:1541] to the designer of the boards. I hope he is in town. You have good comments but I would proceed as specified by the manual. Many units have been built as implemented.

Ron W5RKN

also:  
rparsons@bga.com

---

## 18. RE: [DSP-93:1530] dspload.linux.tar relocated

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Wed, 6 Sep 1995 14:26:48 GMT  
To: dsp-93@tapr.org  
Message-ID: <199509061426.28505.0@getafix>  
Rendered body type: text/plain

Jim, now that I have my dsp-93 built and running, I tried the Linux dspload and ran into a problem with the speed setting. The calls to cfsetospeed and cfsetispeed are passing in the baud value (19200) rather than the converted value B19200 stored in the variable bits. I intend writing an X-Windows version soon!  
Thanks, John Melton g0orx/n6lyt

---

## 19. [DSP-93:1539] DSP-93 Block Diagrams (Rev)

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@vm.gmd.de>  
Date: Wed, 6 Sep 95 17:34:44 EST  
To: <dsp-93@TAPR.ORG>  
Message-ID: <199509061535.KAA27469@sys1.tapr.org>  
Rendered body type: text/plain

Ron,

I have tried to download the new block diagrams, but it gives me some problems. I still get the old files. It could be that the new file has the same name as the old one. I cleared my cache on Netscape 1.1 but it still gives the old file. We also have a "firewall server" that buffers files, and it could be that I get the old file from there. The file size I receive is 38 k about , and the new file is indicated to be 41 k. The only way out is to give the file a new name if I cannot convince our system administrator to clear our "firewall server". Any comments?  
Boris SM0GJ DJ0EX

End of Message

---

## 20. Re: [DSP-93:1544] DSP-93 Block Diagrams (Rev)

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 6 Sep 1995 11:41:23 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac737e6ccb96@[204.251.33.75]>  
Rendered body type: text/plain

>Ron,

>I have tried to download the new block diagrams, but it gives me some  
>problems. I still get the old files. It could be that the new file  
>has the same name as the old one. I cleared my cache on Netscape 1.1  
>but it still gives the old file. We also have a "firewall server" that  
>buffers files, and it could be that I get the old file from there.  
>The file size I receive is 38 k about , and the new file is  
>indicated to be 41 k. The only way out is to give the file  
>a new name if I cannot convince our system administrator to  
>clear our "firewall server". Any comments?

>Boris SM0GJ DJ0EX

>

>End of Message

I did change the file name. The old ones (now deleted) were:  
ftp://ftp.tapr.org/tapr/dsp93/schems/Analog\_Block\_Header.ps  
ftp://ftp.tapr.org/tapr/dsp93/schems/Digital\_Block\_Diagram.ps

The new ones are:  
ftp://ftp.tapr.org/tapr/dsp93/schems/Analog\_Block.ps  
ftp://ftp.tapr.org/tapr/dsp93/schems/Digital\_Block.ps

Since the changes were so minor, the file sizes are probably close to the same.

I just checked the ftp site via the Web page and it is as it should be.

Ron W5RKN

also:  
rparsons@bga.com

---

## 21. Problem: My dsp-93 change some characters

From: luis@encomix.es (Luis Ferreras)  
Date: Wed, 06 Sep 1995 19:33:46 +0200  
To: dsp-93@tapr.org  
Message-ID: <6tdTw0J09QXI083yn@encomix.es>  
Rendered body type: text/plain

Hello.

I have completed the assembly of the kit, and it works, but when it send characters to the computer, some characters are changed (the bit of weight '8') changes from 0 to 1. Example:

-----

\*?  
DSP-93 TAPR / AMSIT REV 2.17  
Copyright <c> 1995 by Tucson Amateur Packmt Radio Corporation.

A-AR REGISTMRS  
D-DUMP MEMORY  
F-FILL MEMORY  
G-FLIP & RUN PROGRAM @ 1008h  
H-INTEL(LOADER HIGH BITS  
J-JUMP TO XXXX & ZUN  
L-INTEL LOADEZ LOW BITS  
M-MODIFY WORD  
P-FIRMWAZE PROGRAMS  
R-RESMT  
S-SHOW WORD  
T-TEST

-----

The AMSAT changes to AMSIT, Tucson to Tucson...  
Another menu..

-----

\*?  
DSP-9; TAPR / AMSAT REV(2.17  
Copyright <k> 1995 by Tucson Iamateur Packet Radio Corporation.

A-AR REGISTERS  
D-DUMP MEMORY  
F-FILL MEMORY  
G-FLIP . RUN PROGRAM @ 1008h  
H-INTEL LOADEZ HIGH BITS  
J-JUMX TO XXXX & RUN  
L-INTEL LOADER LOW(BITS  
M-MODIFY WOZD  
P-FIRMWARE PROORAMS  
R-RESET  
S-[HOW WORD  
T-TEST

-----

Apart form this, the test programs and the audio filter seems to work O.K.

Anybody knows where is the problem?. The Uart?. I mount the 2 capacitors of the crystal of the Uart changed, but I have changed their position, and the problem remains.

---

## 22. Re: [DSP-93:1546] Problem: My dsp-93 change some characters

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 6 Sep 1995 15:48:13 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac73b8c7816d@[204.181.160.69]>  
Rendered body type: text/plain

>Hello.  
>I have completed the assembly of the kit, an it works, but when it send  
>characters to the computer, some characters are changed (the bit of weigth '8')  
>changes from 0 to 1. Example:  
>  
>SNIP...  
>The AMSAT changes to AMSIT, Tucson to T}ucson...  
>Another menu..  
>  
>SNIP...  
>  
>Apart form this, the test programs and the audio filter seems to work O.K.  
>  
>Anybody knows where is the problem?. The Uart?. I mount the 2 capacitors of  
>the crystal of the Uart changed, but I have changed their position, and the  
>problem remains.  
>  
>73's Luis (eblvb)

I'd suspect the PC hardware first. What CPU and what speed? What UART is  
being used in your computer. Using a good quality cable?

The DSP-93 spews out characters pretty fast and not all computers can keep up.

Ron W5RKN

also:  
rparsons@bga.com

---

## 23. DSP-93 CHIP ID LIST

From: bandy@server.elysian.net (John Bandy)  
Date: Thu, 7 Sep 95 09:05 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0sqhAM-00024dC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: DSP-93 CHIP ID LIST

Hello One and All

If anyone has a list of the dsp-93 chips with similar below exempld  
info, please send it to: John Bandy W0UT; 2810 Euclid; Wichita, Ks  
67217-1927.

| Chip No | Chip Name/Description  | Reference Book         |
|---------|------------------------|------------------------|
| LM386   | 400 mW Audio Amplifier | Radio Shack Data Books |
| ..      |                        |                        |
| ..      |                        |                        |

Like the function block diagram, it was not included with my kit.

I'm still waiting on someone to send me a function block diagram. <sob>

Kindly suggest the tech writers and publisher look thru an old Heathkit  
manual for suggestions and ideas. Hi!

73's  
John W0UT

---  
□ OLX 1.53 □ For every answer there is a problem.

---

## 24. Re: [DSP-93:1548] DSP-93 CHIP ID LIST

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 7 Sep 1995 10:35:15 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac74c025622b@[204.181.160.81]>  
Rendered body type: text/plain

John,

What specific info are you requesting?

>If anyone has a list of the dsp-93 chips with similar below exempld  
>info, ...

>

>Like the function block diagram, it was not included with my kit.

It did not exist when your kit was sent out. I created them at your request.

>I'm still waiting on someone to send me a function block diagram. <sob>

The block diagrams are on the ftp site. I asked you what graphics formats you could read. I can probably convert the ones available. Can't you display a GIF file? That's about as universal as you can get. If not, GIF viewers are less that a dime a dozen on ftp sites.

>Kindly suggest the tech writers and publisher look thru an old Heathkit  
>manual for suggestions and ideas. Hi!

Perhaps you misunderstand how TAPR works. It's ALL volunteer effort. There are NO tech writers, etc. If you see something that is needed, ask (as you did for the block diagrams and I created them within the week), or better ,do it yourself and contribute to the group!!!!!!

Ron W5RKN

also:  
rparsons@bga.com

---

## 25. Re: DSP-93 and TS-790

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 7 Sep 1995 15:25:02 -0400  
To: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Cc: dsp-93@tapr.org  
Message-ID: <v0153050bac74bdf7d198@[152.38.1.2]>  
Rendered body type: text/plain

Hello Jabi,

I am posting this response to the DSP93 mailing list in case others care.....

I have never measured the voltage at the varactor. I simply turned up the transmit pot until it worked!

I have counted the number of turns required to get my beta-test unit into the right range for transmitting. It is about 17 turns of the pot from "zero".

Is your rig known to transmit with any other 9600 baud modem? Are you sure the rig is modified correctly for xmit? Sounds like it is, but just checking the obvious things first.

Have you tried 1200 baud xmit thru the varactor maybe? This might test the cable out at least.

>>X-Sender: gobier02@sarenet.es  
>>Date: Thu, 07 Sep 1995 10:09:42 +0200  
>>To: hammond@camel.campbell.edu  
>>From: gobier02@sarenet.es (Jabi Aguirre)  
>>Subject: DSP-93 and TS-790  
>>

>>Dear om,

>>I have problems in Transmit 9600 bds. with the FSK\*.modems in DSP-93.

>>Not problem in RX.

>>In TX, I have 1 V p-p in teh varactor across 4,7 k ohm. but not is

>>possible for mee connect with the K0 series satellites.

>>You have the same cuestion?

>>Excusme my poor english...  
>>73, de Jabi, EA2ARU.  
>>  
>> Jabi Aguirre, EA2ARU  
>> gobier02@sarenet.es  
>>  
>>  
>>  
>  
>  
>Mark L. Hammond [KC4EBR]

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 26. Re: (Fwd) dsplod for Linux

From: "bba" <bba@ne.dk>  
Date: Fri, 08 Sep 95 08:46:45 dst  
To: dsp-93@tapr.org  
Message-ID: <9508088105.AA810575205@smtplink.ne.dk>  
Rendered body type: text/plain  
To Jim, K4GVO

I downloaded dsplinux.tar some time ago, but have not had time to test it until now.

My Linux is kernel version 1.1.59 from Slackware release 2.1. My Dsp-93 is also on /dev/ttyS0, which I have verified using 'minicom' on that same port to talk to the Dsp-93.

The enclosed executable refused to start and gave this message:  
'Using incompatible library 'lib/libc.so.4.5.26'  
Desire minor version >= 6 and found 5'  
so I compiled the source (gcc dsplod.c -o dsplod) and got a version that would execute.

I used the file 'testleds.obj' from the first build distribution for the test but had very little luck. The program writes the following on the screen:

19200  
Line 10

(after having displayed 'Line 9' for some time) and then nothing happens - the program hangs until stopped with Ctrl-C. Sometimes all the LEDs are extinguished, sometimes LEDs 5 & 7 are lit.

The program writes the file 'testleds.HI' (282 bytes) but the file 'testleds.LO' is empty (0 bytes).

Hope the above gives you some clues to what may be wrong.

Best 73 de Bent/OZ6BL

(also oz6bl@amsat.org)

---

## 27. Re: [DSP-93:1550] Re: DSP-93 and TS-790

From: gobier02@sarenet.es (Jabi Aguirre)  
Date: Fri, 08 Sep 1995 09:45:58 +0200  
To: dsp-93@tapr.org  
Message-ID: <9509080738.AA10511@sarenet.es >  
Rendered body type: text/plain

>Hello Jabi,  
>  
>I am posting this response to the DSP93 mailing list in case others care.....  
>  
>I have never measured the voltage at the varactor. I simply turned up the  
>transmit pot until it worked!  
>  
>I have counted the number of turns required to get my beta-test unit into  
>the right range for transmitting. It is about 17 turns of the pot from  
>"zero".

In what pot. you have 17 turns?

>  
>Is your rig known to transmit with any other 9600 baud modem? Are you sure



>the rig is modified correctly for xmit? Sounds like it is, but just  
>checking the obvious things first.

Mi rig is also 7s.790 and I am also be very actif in K0-23 ans others 960  
bds. satellites  
with DSP-2232 and G3RUH original modems...

>

>Have you tried 1200 baud xmit thru the varactor maybe? This might test the  
>cable out at least.

>

Is possible...

>>>X-Sender: gobier02@sarenet.es  
>>>Date: Thu, 07 Sep 1995 10:09:42 +0200  
>>>To: hammond@camel.campbell.edu  
>>>From: gobier02@sarenet.es (Jabi Aguirre)  
>>>Subject: DSP-93 and TS-790  
>>>

>>>Dear om,  
>>>I have problems in Transmit 9600 bds. with the FSK\*.\* modems in DSP-93.  
>>>Not problem in RX.  
>>>In TX, I have 1 V p-p in teh varactor across 4,7 k ohm. but not is  
>>>possible for mee connect with the K0 series satellites.  
>>>You have the same cuestion?  
>>>Excusme my poor english...  
>>>73, de Jabi, EA2ARU.  
>>>

>>> Jabi Aguirre, EA2ARU  
>>> gobier02@sarenet.es  
>>>  
>>>  
>>>  
>>  
>>

>>Mark L. Hammond [KC4EBR]  
>  
>-----  
>Mark L. Hammond [KC4EBR]  
>Campbell University  
>  
>  
>  
>

73 for all....

Jabi Aguirre, EA2ARU  
gobier02@sarenet.es

---

## 28. Re: [DSP-93:1552] Re: DSP-93 and TS-790

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Fri, 08 Sep 1995 11:43:53 +0000  
To: dsp-93@tapr.org  
Message-ID: <199509081148.HAA24767@camel.campbell.edu>  
Rendered body type: text/plain

For radio port 1, use pot R214. For radio port 2, use pot R213. These are  
the transmit audio pots.

Let me know how it goes. Sounds like your radio is okay, must just be an  
adjustment or connection missing somewhere.

>

>>I have counted the number of turns required to get my beta-test unit into  
>>the right range for transmitting. It is about 17 turns of the pot from  
>>"zero".

>

>In what pot. tou have 17 turns?

>

Mark L. Hammond [KC4EBR]

---

## 29. Flux Removal - Update

From: bobsmith@mail.i2020.net (Robert L. Smith)  
Date: Fri, 8 Sep 95 13:50:36 EDT  
To: Bob.Cummings@ccmail.gsfc.nasa.gov  
Message-ID: <Chameleon.950908143100.bobsmith@>

Rendered body type: text/plain

To All --

This is an update to my posting of 8/2/95 regarding "Flux Removal, etc."

Shortly after the posting I had a nice call from Bob Cummings at NASA Goddard regarding his concern that my reference to prior space hardware experience might possibly be interpreted by some that NASA had relaxed its standards regarding flux removal and the possible use of "No-Clean" fluxes.

While I am sure that the subscribers to this list understand that the recommendations were intended for builders of DSP-93 kits, I fully agree that the possible consequences of failure to adhere to the prescribed workmanship standards on any NASA contracted hardware justifies a clarification of this important issue. Bob's primary concern was that since there is probably significant crossover between TAPR, AMSAT, and the many contractors supplying hardware to NASA it might be possible that my comments could imply a change in NASA's position on the subject.

In order to assure accuracy, I suggested that he send an official position statement on the subject. That arrived a few days ago and is included below without revision.

I strongly recommend that recipients of my original posting attach a copy of this message for the edification of future readers.

To TAPR moderator - I suggest that a copy of this also be attached to the archive of the original posting for the benefit of future downloaders.

To anyone who has been inconvenienced by the original posting I offer my sincere apologies.

And, to Bob and the fine folks at NASA, my apologies for the disruption to their, which I am sure is already hectic, routine.

\*\*\*\*\* Inclusion \*\*\*\*\*

>Mr. Smith,  
>  
>I work for Robert J. Cummings at the NASA Training Center located at  
>the Goddard Space Flight Center in Greenbelt, MD. We train personnel  
>to build and inspect space-flight and ground support hardware. The basis  
>of our training program is the NASA 5300.4 series of workmanship documents.  
>These are requirements documents that are imposed on contractors that  
>build hardware for all of the NASA centers.  
>  
>The NASA Handbook 5300.4(3A-2) "Requirements for Soldered Electrical  
>Connections" Chapter 2 gives the requirements for the types of fluxes,  
>solders, solvent, and soldering irons that are approved for use on NASA  
>projects. This chapter also requires that alternate types of fluxes,  
>solders, and solvents must be approved by NASA prior to use.  
>  
>Chapter 7, paragraph 3A703 of NHB 5300.4(3A-2) requires all flux and  
>residues be cleaned from the hardware within 30 minutes of soldering.  
>The requirements for final cleaning are that there be no visible evidence  
>of flux residue or contamination when examined under 4X to 10X magnification.  
>  
>I want to be sure there is no confusion, as a result of your article, about  
>the NASA requirements for cleaning and the materials used in manufacturing  
>ground support or space-flight hardware. Please feel free to call me if  
>you need further clarification or if you would like a copy of  
>NHB 5300.4(3A-2).  
>  
>Thank you,  
>  
>Norma Lee Todd  
>NASA Training Center/GSFC/Code 300.1  
>Norma.Todd@ccmail.GSFC.NASA.Gov  
>(301)731-8624  
>

-----  
Robert L. Smith                      804/745-1065                      bobsmith@i2020.net  
Smith Machine Works, Inc.                                      wa4ypv@w4za.ampr.org

### 30. New heatstroke - now cured

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 9 Sep 1995 16:14:03 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac77b288dcea@[204.96.0.137]>  
Rendered body type: text/plain

VE3BCG just reported on KO-25 a symptom that I diagnosed as a case of heatstroke. I had him check U115 and as you can see from the following, that led to a cure.

Told him that he needed to replace it with a 74S03. I don't think a 7403 will do in the long run.

-----  
To W5RKN  
>From VE3BCG  
Sep.5/95  
181500 UTC  
Hello Ron ... Here is another customer for you !!. Recently assembled my DSP-93 and really enjoyed it. Went together very nicely. I have not yet connected a TNC but all the firmware tests I have run so far are OK for about 10 minutes, then all stops.Example- Run LED test and after 10 min. stops. I can still reset and bring up ? menus but nothing will run. It will continue working OK if I keep a muffin fan running on it. Looks as if it could be a heat sensitive IC and in trying to figure that out I measured the current via the voltage drop across R210 and R107 (.22) I realize +5 is tied together when boards assembled. Assembled and idle (reset).Board 2 R210 (.051 V) 232 ma. Board 1 R107 (.043) 195 ma. This does not drift or change when I have the "condition". With the boards separated I get, Board 2 R210 (.040) 180 ma. This is with U215 removed to keep LED's off. Board 1 R107 (.054) 245 ma. This seems high but I can't pin anything down. Removed all IC's but everything is normal on each board with power on. When stopped voltages are OK and scope on U114 pin 9 Clock is OK. Has never blown fuse. I do not have access to Internet Ron so is there anything I should know about regarding this last release ? What are the normal values on the "buffer" resistors ? Thanks for reading my story Ron. Am looking forward to Orlando and will u be there? 73 Geo VE3BCG.

-----  
To W5RKN  
>From VE3BCG  
Sep.9/95  
Hi Ron:  
Nice to be a member of the "Heatstroke Club".:-(  
U115 is in fact a 74ALS03 in this unit, so I replaced it with a 7403 from my "goodies"box and has been running ever since. The 7403 is definitely cooler to the touch. Could not get a 74S03 locally but tried a 74LS03 and it would not run at all. Am looking for a better scope. Thanks very much for all the good info, sorry we won't meet u Ron. There will be 4 from Ontario I know about, including Syd VE3EGO and myself. Will be in touch. Thanks again 73 Geo.  
-----

Ron W5RKN

also:  
rparsons@bga.com

---

### 31. Re: Problem: My dsp-93 change some characters

From: luis@encomix.es (Luis Ferreras)  
Date: Sun, 10 Sep 1995 15:05:12 -0400  
To: dsp-93@tapr.org  
Message-ID: <obzUw0J09QBp083yn@encomix.es>  
Rendered body type: text/plain

> >Hello.  
> >I have completed the assembly of the kit, an it works, but when it send  
> >characters to the computer, some characters are changed (the bit of weighth '8')  
> >changes from 0 to 1. Example:  
> >  
> >SNIP...  
> >The AMSAT changes to AMSIT, Tucson to T}ucson...  
> >Another menu..  
> >  
> >73's Luis (eblevb)  
> >  
> >I'd suspect the PC hardware first. What CPU and what speed? What UART is

> being used in your computer. Using a good quality cable?  
>  
> The DSP-93 spews out characters pretty fast and not all computers can keep up.  
>  
> Ron W5RKN  
>  
I use a 466DX66 with COM2 (8250), but in COM4 I have a 16550 that I am using with a 14400 bps telephone modem. I tried with COM4 and I have the same error. I have made the cable, but it is shielded, and I use it with a TNC-2 clone at 19200 bps without problems...

Well, thanks anyway, I will try to investigate more about this theme.

73's Luis EB1EVB

---

## 32. HSCH1001 vs 1N5817

From: Bob Stricklin <bstrick@dallas.net>  
Date: Sun, 10 Sep 1995 11:43:26 -0500  
To: dsp-93@tapr.org  
Message-ID: <9509101643.AA12582@dns>  
Rendered body type: text/plain

You may use the HSCH1001 and the 1N5817 interchangeably in any of the locations referenced for these diodes. They are both very fast transient suppressing diodes.

>Date: Wed, 6 Sep 1995 02:55:11 -0500  
>Reply-To: dsp-93@tapr.org  
>Originator: dsp-93@tapr.org  
>Sender: dsp-93@tapr.org  
>Precedence: bulk  
>From: segbert@primenet.com (segbert)  
>To: dsp-93@tapr.org  
>Subject: [DSP-93:1541] Build Question  
>X-Comment: Tucson Amateur Packet Radio DSP-93 Kit SIG  
>MIME-Version: 1.0  
>Status:  
>  
>On page 18 of the build instructions, under Diodes, it says  
>to install:  
>  
>D205 1N5817 Fast Recovery Diode  
>D201 HSCH1001 or 1N5817  
>D202 HSCH1001 or 1N5817  
>  
>The parts list says:  
>3 1N5817 or HSCH1001 D201,D202,D205  
>  
>The Schematic calls out HSCH1001 for D201 & D202, but 1N5817 for D205.  
>  
>I got 3 HSCH1001s. Can I use this for D205, or is the specification  
>of only 1N5817 on page 18 significant?  
>  
>73  
>N7XSQ

Bob Stricklin, N5BRG

---

## 33. Re: Can you respond to this?

From: Bob Stricklin <bstrick@dallas.net> (by way of w5rkn@amsat.org (Ronald G. Parsons))  
Date: Sun, 10 Sep 1995 14:19:45 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac78cfbdd64b@[204.251.33.79]>  
Rendered body type: text/plain  
>  
>  
>Date: Wed, 6 Sep 1995 02:36:07 -0500  
>Reply-To: dsp-93@tapr.org  
>Originator: dsp-93@tapr.org  
>Sender: dsp-93@tapr.org

>Precedence: bulk  
>From: segbert@primenet.com (segbert)  
>To: dsp-93@tapr.org  
>Subject: [DSP-93:1540] Build Questions  
>X-Comment: Tucson Amateur Packet Radio DSP-93 Kit SIG  
>MIME-Version: 1.0  
>Status:  
>  
>Hi Guys:  
>I am assembling one of the latest build kits. I got concerned in  
>the power supply area of board 2. C225 has a silkscreened polarity  
>marking but takes a monolythic ceramic capacitor, while C216 has  
>no silkscreened polarity marking,  
  
The mark next to C225 is not a polarity mark. It is a small arrow indicating  
which component the C225 applies to. In a couple of areas where things got  
tight I put these arrows in. C216 should have a polarity mark but does not.

> but takes an electrolytic, so I  
>buzzed out the area. I discovered that the schematic does not  
>match the boards that I have. (Schematic rev 2/8/95, Board2 rev2  
>3/1/95, Board1 rev2 3/1/95.  
>  
>Analog schematic page 5 shows C216, C217, C218, C219, C220, & C221  
>attached to the net on the regulator side of R210. On the actual  
>board, VR201, pin V0 goes directly and only to R210. ALL the  
>capacitors are on the +5 VDC side of R210. Digital schematic  
>page 3 has a similar defect in that R107 is actually between  
>VR100 and the capacitors.

You are correct this is an error. The .22 ohm resistor should be moved to  
the output of V0 in both the analog and digital schematic. I will make this  
change on the original.

> My National Linear data book  
>recommends that "bypass capacitors are recommended for optimum  
>stability and transient response, and should be located as close  
>as possible to the regulator." I think there should probably be a  
>.1 from V0 to GND of VR100 & VR201, before the .22 resistors, and  
>this was the original intent of C217 & C119.  
>

I do not feel you will notice the difference but add a .1 cap here if you  
like. This is not a required change that everyone should make however.

In the first pass bata board set I used only one regulator on the analog  
board and C217 and C119 were connected directly to the output and at the  
output. To balance the regulators the .22 ohm resistor was added and I did  
not think to add an addition .1 cap on the regulator side of the .22 ohm  
resistor.

Bob Stricklin, N5BRG

---

## 34. Software

From: dmedley@indirect.com (David Medley)  
Date: Mon, 11 Sep 1995 10:38:17 -0700  
To: dsp-93@tapr.org  
Message-ID: <199509111738.KAA12807@bob.indirect.com>  
Rendered body type: text/plain

Frank or Ron. I have been laid low for three weeks now having had emergency  
prostate surgery. All is well and I am just now getting enough energy to  
want to do something useful!!  
Is there an up to date list of the recommended modems for the DSP? I have so  
many different files here and I did not make any sensible notes before I  
became ill.  
Dave KI6QE

---

## 35. Re: [DSP-93:1559] Software

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 11 Sep 1995 14:17:17 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac7a3b0375e9@[204.96.0.144]>  
Rendered body type: text/plain

>Frank or Ron. I have been laid low for three weeks now having had emergency  
>prostate surgery. All is well and I am just now getting enough energy to  
>want to do something useful!!  
>Is there an up to date list of the recommended modems for the DSP? I have so  
>many different files here and I did not make any sensible notes before I  
>became ill.  
>Dave KI6QE

Dave,

The best person for over-all "what's the latest software" questions is  
Mark, KC4EBR, our librarian. I'm afraid I don't keep up with all the  
software.

Ron W5RKN

also:  
rparsons@bga.com

---

### 36. 40 mHz osc.

From: n7ryw@teleport.com (William Roth)  
Date: Mon, 11 Sep 1995 17:31:42 -0700  
To: dsp-93@tapr.org  
Message-ID: <199509120030.RAA04281@desiree.teleport.com>  
Rendered body type: text/plain

I got my DSP-93 a few days ago, and I have been building it up since, an  
hour at a time. When I powered it up, the 40 mHz oscillator failed to  
operate. On taking it out of the circuit, I found that only pin 3 was  
grounded. Pin 4 was left floating, but must be grounded for the oscillator  
to operate properly.

I also put the osc. in a breadboard and powered it up there for an isolated  
test, and it wasn't working. I saw only a few traces of junk on the Spectrum  
Analyser. I also set up a spare 50 mHz unit to check my method, and it  
worked normally. I don't know if the lack of grounding did it in or if it  
was bad from the beginning, but I will replace it.

I have another one on the way today from a local distributor, but I thought  
that this should be noted for other builders. My fix is to solder a bridge  
from the good ground pin to the open one. I am also going to use a socket. I  
know the extra lead length can contribute to noise radiation, but I'm not  
about to try desoldering another one of those clocks again. Note that the  
clocks' pins are usually a little small for a socket, and the clock can tend  
to fall out. As long as the clock is tied down to the socket, it should do  
just fine. I use a small tie down on the PCs I build, and this has always  
worked great, with no heat stress to the component from soldering, either.

More later!

TTYL

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

### 37. Re: [DSP-93:1561] 40 mHz osc.

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 11 Sep 1995 20:03:39 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac7a8c8f9f20@[204.181.160.83]>  
Rendered body type: text/plain

Bill,

>I am also going to use a socket. I  
>know the extra lead length can contribute to noise radiation, but I'm not  
>about to try desoldering another one of those clocks again. Note that the  
>clocks' pins are usually a little small for a socket, and the clock can tend  
>to fall out.

I socketed my XTAL with a low profile socket (with most pins removed) and  
have had no problems.

Ron W5RKN

also:  
rparsons@bga.com

### 38. Re: [DSP-93:1561] 40 mHz osc.

From: Bob Stricklin <bstrick@dallas.net>  
Date: Mon, 11 Sep 1995 20:36:57 -0500  
To: dsp-93@tapr.org  
Message-ID: <9509120136.AA02809@dns>  
Rendered body type: text/plain

At 07:34 PM 9/11/95 -0500, you wrote:

>I got my DSP-93 a few days ago, and I have been building it up since, an  
>hour at a time. When I powered it up, the 40 mHz oscillator failed to  
>operate. On taking it out of the circuit, I found that only pin 3 was  
>grounded. Pin 4 was left floating, but must be grounded for the oscillator  
>to operate properly.

Bill, if you look at the component side of board 1 with no oscillator in place the pins are numbered with a silk screen. There is a white dot next to pin 1 and the pins are numbered counter-clockwise 1-2-3-4 as you look down on the clock.

With this in mind, Pin 1 is open, Pin 2 is ground, Pin 3 is out, and Pin 4 is Vcc or +5 V digital.

It may be that the open pin should be grounded on the clocks shipped with the kits. If this is the case I am not aware of it. Perhaps you could post the manufactures name of the clock you have. Also do you have a data sheet from the mfg. for this clock indicating two pins must be grounded.

>  
>I also put the osc. in a breadboard and powered it up there for an isolated  
>test, and it wasn't working. I saw only a few traces of junk on the Spectrum  
>Analyser. I also set up a spare 50 mHz unit to check my method, and it  
>worked normally. I don't know if the lack of grounding did it in or if it  
>was bad from the beginning, but I will replace it.  
>  
>I have another one on the way today from a local distributor, but I thought  
>that this should be noted for other builders. My fix is to solder a bridge  
>from the good ground pin to the open one. I am also going to use a socket. I  
>know the extra lead length can contribute to noise radiation, but I'm not  
>about to try desoldering another one of those clocks again. Note that the  
>clocks' pins are usually a little small for a socket, and the clock can tend  
>to fall out. As long as the clock is tied down to the socket, it should do  
>just fine. I use a small tie down on the PCs I build, and this has always  
>worked great, with no heat stress to the component from soldering, either.  
>  
>More later!  
>TTYL  
>>From Bill, n7ryw@teleport.com  
>Amsat NA Life Member #2109  
>  
>  
>

Bob Stricklin, N5BRG

---

### 39. No Subject

From: EARLWC@aol.com  
Date: Tue, 12 Sep 1995 09:14:48 -0400  
To: dsp-93@tapr.org  
Message-ID: <950912091446\_17076604@mail06.mail.aol.com>  
Rendered body type: text/plain

Test

---

### 40. Re: [DSP-93:1563] Re: 40 mHz osc.

From: n7ryw@teleport.com (William Roth)  
Date: Tue, 12 Sep 1995 08:52:57 -0700  
To: dsp-93@tapr.org  
Message-ID: <199509121551.IAA16275@desiree.teleport.com>  
Rendered body type: text/plain

>>I got my DSP-93 a few days ago, and I have been building it up since, an  
>>hour at a time. When I powered it up, the 40 mHz oscillator failed to  
>>operate.

My unit is now running with a new 40 mHz oscillator can. There are a few things to look out for on these! On the replacement part I got from Marshall yesterday, Pin 1 is used to switch it into a 'Low Emissions' mode. The output is much lower, but also a lot cleaner. This is intended for critical applications where an amplifier stage and filtering follows the oscillator to further clean up the output. The output with pin 1 grounded was not sufficient to drive the divider circuit, so I used it in the normal 'dirty' mode. Lots of harmonics (as usual) but it works great. Some day I may use the extra room next to the can to put in a small amplifier and filter and use the clean mode.

I'm told that another unit uses this pin to select output between normal and one that imitates a crystal. I had a few oscillators for PCs hanging around, so I checked them in the breadboard. In some cases, they needed pin 1 grounded, in others it did not matter. None of those had the low output level, but I do remember someone here having an output amplitude problem so this may be why.

So, it seems that there are some oddballs running around out there. If your oscillator doesn't work, or has a really low output level, try grounding pin 1 and see what happens.

>From Bill, n7ryw@teleport.com  
>Amsat NA Life Member #2109

---

#### 41. Re: 40 mHz osc.

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 12 Sep 1995 12:28:06 -0400  
To: dsp-93@tapr.org  
Message-ID: <v01530502ac7b2cf1c5ef@[152.38.1.2]>  
Rendered body type: text/plain

Good detective work, Bill. Welcome to the group. Does this mean your unit is currently "doing its hicky"?

>>>I got my DSP-93 a few days ago, and I have been building it up since, an  
>>>hour at a time. When I powered it up, the 40 mHz oscillator failed to  
>>>operate.

>

>My unit is now running with a new 40 mHz oscillator can. There are a few  
>things to look out for on these! On the replacement part I got from Marshall  
>yesterday, Pin 1 is used to switch it into a 'Low Emissions' mode. The  
>output is much lower, but also a lot cleaner. This is intended for critical  
>applications where an amplifier stage and filtering follows the oscillator  
>to further clean up the output. The output with pin 1 grounded was not  
>sufficient to drive the divider circuit, so I used it in the normal 'dirty'  
>mode. Lots of harmonics (as usual) but it works great. Some day I may use  
>the extra room next to the can to put in a small amplifier and filter and  
>use the clean mode.

>

>I'm told that another unit uses this pin to select output between normal and  
>one that imitates a crystal. I had a few oscillators for PCs hanging around,  
>so I checked them in the breadboard. In some cases, they needed pin 1  
>grounded, in others it did not matter. None of those had the low output  
>level, but I do remember someone here having an output amplitude problem so  
>this may be why.

>

>So, it seems that there are some oddballs running around out there. If your  
>oscillator doesn't work, or has a really low output level, try grounding pin  
>1 and see what happens.

>>From Bill, n7ryw@teleport.com  
>Amsat NA Life Member #2109

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

#### 42. Re: [DSP-93:1566] Re: 40 mHz osc.

From: n7ryw@teleport.com (William Roth)  
Date: Tue, 12 Sep 1995 13:20:36 -0700  
To: dsp-93@tapr.org  
Message-ID: <199509122019.NAA10846@desiree.teleport.com>  
Rendered body type: text/plain

>Good detective work, Bill. Welcome to the group. Does this mean your unit  
>is currently "doing its hicky"?

Yes. I made up a TTL cable this morning and got it to talk to the PC. I'm building a power supply to run from my 12vdc busses, so I didn't have the



-+12v for the level convertor. I connected the TTL to my laptops' modem connector and it works great.

I need to mount the thing in the box, but I'm going to wait until I get the PS built, instead of taking it in and out for that. I'm also going to replace the serial driver with a MAX233A chip, so I still have some work in front of me. Too bad it wasn't done that way to begin with.

TTYL

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

#### 43. Re: [DSP-93:1528] Another one up and running!

From: Song Jin Suk <sjs@tigermask.kotel.co.kr>  
Date: Wed, 13 Sep 95 17:07:52 MDT  
To: dsp-93@tapr.org  
Message-ID: <199509130806.DAA15371@sys1.tapr.org>  
Rendered body type: text/plain

[Empty message body]

---

#### 44. DSP-93 on UO-22

From: Carol Byers <crlbyers@garlic.com>  
Date: Wed, 13 Sep 1995 12:32:30 -0700 (PDT)  
To: hardware dsp-93 <dsp-93@tapr.org>  
Message-ID: <Pine.A32.3.91.950913122605.29733A-100000@garlic.com>  
Rendered body type: text/plain

The DSP-93 performance seems to be poor on UO-22. Have tried all the PSK modems, and they all given about the same results, i.e., about 1/5 the received data rate as compared to K0-23/25.

Is there something I'll doing wrong ? Has anyone else had similar experiences ?

Carol, W9HGI

---

#### 45. Re: [DSP-93:1569] DSP-93 on UO-22

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 13 Sep 1995 15:30:52 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac7cee60e430@[204.251.33.65]>  
Rendered body type: text/plain

>The DSP-93 performance seems to be poor on UO-22. Have tried all the PSK modems, and they all given about the same results, i.e., about 1/5 the received data rate as compared to K0-23/25.

Hint, use the FSK modems, not the PSK modems :-) (I'm sure that was a typo)

Really, the modulation on UO-22 is quite different from the 23-25 pair. It even has a DC bias that drifts around. Play around with the input gain pot. If you have a way to record the audio from your radio, and play it back, it makes it easier to experiment. At least that way, you are using the same data.

Roy W0SL and I have had recording success with Hi-8 video recorders (the audio track synced to a previously recorded video signal (over-dub the audio)) and with Macintosh built-in audio recording and playback at 44k Hz and 16 bit audio. If you have access to any of that, play with it.

What is the width of your receivers IF filters. 20 kHz filters may help.

>Is there something I'll doing wrong ? Has anyone else had similar experiences ?

>

>Carol, W9HGI

Ron W5RKN

also:  
rparsons@bga.com

---

#### 46. Re: [DSP-93:1560] Re: Software

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Thu, 14 Sep 1995 00:46:40 +0000  
To: dsp-93@tapr.org  
Message-ID: <199509140046.UAA10238@camel.campbell.edu>  
Rendered body type: text/plain

Hi Dave,

Yes, Ron is right. Keeping track of the software is my job, since I am still serving as software librarian for the DSP-93.

I recall posting new versions of the PSK modems and APT modems from Frank. See DSP-93:1537 for details (I will forward you a copy in private). In addition, a Linux version of DSPLoad.EXE has been released. That is all I can think of for the past few weeks.

Glad to see you home from the hospital. Not a nice place to stay...

At 14:25 9/11/95 -0500, you wrote:

```
>>Frank or Ron. I have been laid low for three weeks now having had emergency
>>prostate surgery. All is well and I am just now getting enough energy to
>>want to do something useful!!
>>Is there an up to date list of the recommended modems for the DSP? I have so
>>many different files here and I did not make any sensible notes before I
>>became ill.
>>Dave KI6QE
>
>Dave,
>
>The best person for over-all "what's the latest software" questions is
>Mark, KC4EBR, our librarian. I'm afraid I don't keep up with all the
>software.
>
>
>Ron W5RKN
>
>also:
>rparsons@bga.com
>
>
>
>
```

Mark L. Hammond [KC4EBR]

---

## 47. Another one up and running

From: John Ballard <jballard@microsoft.com>  
Date: Thu, 14 Sep 95 10:17:22 TZ  
To: netmail!<dsp-93@tapr.org>  
Message-ID: <9509141848.AA12553@netmail2.microsoft.com>  
Rendered body type: text/plain

I finished building my dsp-93 last night. When I powered it up to run the operational tests, I found that it did not work. The problem turned out to be the 40Mhz osc. module. Surprise! I tried the trick mentioned previously on the list, I grounded the non-connected pin on the osc. module. No luck. I replaced the osc. module with a new one and everything worked great.

I guess we got a bad batch of 40Mhz osc. modules. Mine was an EXL 3400, made in Korea.

John KI6PS

---

## 48. HF FSK modem performance data

From: Dave Mills <D.Mills@cs.ucl.ac.uk>  
Date: Fri, 15 Sep 95 12:15:19 +0100  
To: dsp-93@tapr.org  
Cc: D.Mills@cs.ucl.ac.uk  
Message-ID: <199509151115.GAA21454@sys1.tapr.org>  
Rendered body type: text/plain

Guys,

Lest any doubt remain on the performance advantage of the "hot" HF FSK modem in the current software distribution, see the PostScript graph appended to this message. This graph was produced by an intricate simulation of the noncoherent FSK demodulator, soft-decision detector and maximum-likelihood decoder as described in the modem documentation and my report on the animal (see my web page <http://www.eecis.udel.edu/~mills> and punch the Collaboration Resources button).

The graph shows the bit error rate (probability of bit error) and word error rate (probability of character error) for demodulator signal/noise ratio (SNR)

from 0dB to 12dB, which represent the littlest signals likely to tickle your antenna. Remember, this thing already has a healthy signal/noise gain due to the matched filters in the RF signal path.

Looking at the right-hand side of the graph, the top trace represents the calculated raw word error rate (WER) for the 14-bit SITOR character with no coding, while the next trace down represents the calculated raw bit error (BER) rate for a noncoherent FSK demodulator. The next trace down shows the WER for the simulated CCIT 476 maximum likelihood decoder using hard-decision detection. This represents the best performance possible with the usual limiter-discriminator TNC and binary-decision decoder and probably overstates the performance, since no TNC known to me uses a maximum-likelihood (correlation) decoder.

The bottom trace shows the WER for the simulated CCIT 476 maximum-likelihood decoder using soft-decision detection, which is the case for the HF FSK modem. Stated one way, this represents a coding gain of about 1.5dB over the coded hard-decision case and 4dB over the uncoded case at  $WER = 10^{-3}$ . Put another way, this represents a WER reduction of about 1500 over the uncoded case and about 15 over the coded hard-decision case at 10dB SNR.

The performance of the CCITT 476 code compared with the RTTY Baudot code can be estimated from the graph as follows. The performance of the uncoded 7.5-bit RTTY signal is a trifle better than the top trace shown in the graph, while the performance of the CCITT 476 code with the HF FSK modem is shown in the bottom trace. The difference is, well, breathtaking. This helps explain why the modem can copy signals so buried in the noise that the unaided ear can't detect them.

These performance data assume a Gaussian channel, which of course does not closely model the real HF channel; however, they give a pretty good idea of the comparative performance of real channels. In addition, these data do not take into account the improvement in the case of fading channels given by the interleaved structure of the CCITT 476 code.

Dave, w3hcf

P.S. I am in the UK on sabbatical; mail sent to my usual mills@udel.edu box will be forwarded. DLM

```
%!PS-Adobe-2.0
%%Creator: MATLAB, The Mathworks, Inc.
%%Title: x.ps
%%CreationDate: 09/14/95 23:00:10
%%DocumentNeededFonts: Helvetica
%%DocumentProcessColors: Cyan Magenta Yellow Black
%%Pages: (atend)
%%BoundingBox: (atend)
%%EndComments
```

```
%%BeginProlog
```

```
% MathWorks dictionary
/MathWorks 150 dict begin
```

```
% definition operators
/bdef {bind def} bind def
/ldef {load def} bind def
/xdef {exch def} bdef
/xstore {exch store} bdef
```

```
% operator abbreviations
/c /clip ldef
/cc /concat ldef
/cp /closepath ldef
/gr /grestore ldef
/gs /gsave ldef
/mt /moveto ldef
/np /newpath ldef
/cm /currentmatrix ldef
/sm /setmatrix ldef
/rc {rectclip} bdef
/rf {rectfill} bdef
/rm /rmoveto ldef
/rl /rlineto ldef
/s /show ldef
/sc {setcmykcolor} bdef
/sr /setrgbcolor ldef
/w /setlinewidth ldef
```

```

/j /setlinejoin ldef
/cap /setlinecap ldef

% page state control
/pgsv () def
/bpage {/pgsv save def} bdef
/epage {pgsv restore} bdef
/bplot /gsave ldef
/eplot {stroke grestore} bdef

% orientation switch
/portraitMode 0 def
/landscapeMode 1 def

% coordinate system mappings
/dpi2point 0 def

% font control
/FontSize 0 def
/FMS {
 /FontSize xstore %save size off stack
 findfont
 [FontSize 0 0 FontSize neg 0 0]
 makefont
 setfont
} bdef

/reencode {
 exch dup where
 {pop load} {pop StandardEncoding} ifelse
 exch
 dup 3 1 roll
 findfont dup length dict begin
 { 1 index /FID ne {def}{pop pop} ifelse } forall
 /Encoding exch def
 currentdict
 end
 definefont pop
} bdef

/isroman {
 findfont /CharStrings get
 /Agrave known
} bdef

/FMSR {
 3 1 roll 1 index
 dup isroman
 {reencode} {pop pop} ifelse
 exch FMS
} bdef

/csm {
 1 dpi2point div -1 dpi2point div scale
 neg translate
 landscapeMode eq {90 rotate} if
} bdef

% line types: solid, dotted, dashed, dotdash
/SO { [] 0 setdash } bdef
/DO { [.5 dpi2point mul 4 dpi2point mul] 0 setdash } bdef
/DA { [6 dpi2point mul] 0 setdash } bdef
/DD { [.5 dpi2point mul 4 dpi2point mul 6 dpi2point mul 4 dpi2point mul] 0 setdash } bdef

% macros for lines and objects
/L {
 lineto
 stroke
} bdef

/MP {
 3 1 roll moveto
 1 sub {rlineto} repeat
} bdef

/AP {
 {rlineto} repeat
} bdef

/PP {
 closepath fill
} bdef

```

```

/DP {
 closepath stroke
} bdef

/MR {
 4 -2 roll moveto
 dup 0 exch rlineto
 exch 0 rlineto
 neg 0 exch rlineto
 closepath
} bdef

/FR {
 MR stroke
} bdef

/PR {
 MR fill
} bdef

/Lli {
 { currentfile picstr readhexstring pop } image
} bdef

/tMatrix matrix def
/MakeOval {
 newpath
 tMatrix currentmatrix pop
 translate scale
 0 0 1 0 360 arc
 tMatrix setmatrix
} bdef

/FO {
 MakeOval
 stroke
} bdef

/PO {
 MakeOval
 fill
} bdef

/PD {
 2 copy moveto lineto stroke
} bdef

currentdict end def
%%EndProlog

%%BeginSetup
MathWorks begin

0 cap

end
%%EndSetup

%%Page: 1 1
%%BeginPageSetup
%%PageBoundingBox: 52 197 552 594
MathWorks begin
bpage
%%EndPageSetup

%%BeginObject: graph1 1
bplot

/dpi2point 12 def
portraitMode 0216 7344 csm

410 216 5999 4763 MR c np
76 dict begin %Colortable dictionary
/c0 { 0 0 0 sr} bdef
/c1 { 1 1 1 sr} bdef
/c2 { 1 0 0 sr} bdef
/c3 { 0 1 0 sr} bdef
/c4 { 0 0 1 sr} bdef
/c5 { 1 1 0 sr} bdef
/c6 { 1 0 1 sr} bdef
/c7 { 0 1 1 sr} bdef
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

```

```

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

```

```

1 j
c1
 0 0 6941 5191 PR
6 w
D0
4 w
S0
6 w
c0
 902 4618 mt 6280 4618 L
 902 389 mt 6280 389 L
 902 4618 mt 902 389 L
 6280 4618 mt 6280 389 L
 902 4618 mt 902 4618 L
 6280 4618 mt 6280 4618 L
 902 4618 mt 6280 4618 L
 902 4618 mt 902 389 L
 902 4618 mt 902 4618 L
 902 4618 mt 902 4564 L
 902 389 mt 902 443 L
 862 4787 mt
(0) s
 1798 4618 mt 1798 4564 L
 1798 389 mt 1798 443 L
 1758 4787 mt
(2) s
 2695 4618 mt 2695 4564 L
 2695 389 mt 2695 443 L
 2655 4787 mt
(4) s
 3591 4618 mt 3591 4564 L
 3591 389 mt 3591 443 L
 3551 4787 mt
(6) s
 4487 4618 mt 4487 4564 L
 4487 389 mt 4487 443 L
 4447 4787 mt
(8) s
 5384 4618 mt 5384 4564 L
 5384 389 mt 5384 443 L
 5304 4787 mt
(10) s
 6280 4618 mt 6280 4564 L

```

```

6280 389 mt 6280 443 L
6200 4787 mt
(12) s
902 4618 mt 929 4618 L
6280 4618 mt 6253 4618 L
902 4618 mt 956 4618 L
6280 4618 mt 6226 4618 L
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

598 4671 mt
(10) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

758 4582 mt
(-5) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

902 4363 mt 929 4363 L
6280 4363 mt 6253 4363 L
902 4214 mt 929 4214 L
6280 4214 mt 6253 4214 L
902 4109 mt 929 4109 L
6280 4109 mt 6253 4109 L
902 4027 mt 929 4027 L
6280 4027 mt 6253 4027 L
902 3960 mt 929 3960 L
6280 3960 mt 6253 3960 L
902 3903 mt 929 3903 L
6280 3903 mt 6253 3903 L
902 3854 mt 929 3854 L
6280 3854 mt 6253 3854 L
902 3811 mt 929 3811 L
6280 3811 mt 6253 3811 L
902 3772 mt 929 3772 L
6280 3772 mt 6253 3772 L
902 3772 mt 956 3772 L
6280 3772 mt 6226 3772 L
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

598 3825 mt
(10) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

758 3736 mt
(-4) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

902 3518 mt 929 3518 L
6280 3518 mt 6253 3518 L
902 3369 mt 929 3369 L
6280 3369 mt 6253 3369 L
902 3263 mt 929 3263 L
6280 3263 mt 6253 3263 L
902 3181 mt 929 3181 L
6280 3181 mt 6253 3181 L
902 3114 mt 929 3114 L
6280 3114 mt 6253 3114 L
902 3057 mt 929 3057 L
6280 3057 mt 6253 3057 L
902 3008 mt 929 3008 L
6280 3008 mt 6253 3008 L
902 2965 mt 929 2965 L
6280 2965 mt 6253 2965 L
902 2926 mt 929 2926 L
6280 2926 mt 6253 2926 L
902 2926 mt 956 2926 L
6280 2926 mt 6226 2926 L

```

```

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

598 2979 mt
(10) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

758 2890 mt
(-3) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

902 2672 mt 929 2672 L
6280 2672 mt 6253 2672 L
902 2523 mt 929 2523 L
6280 2523 mt 6253 2523 L
902 2417 mt 929 2417 L
6280 2417 mt 6253 2417 L
902 2335 mt 929 2335 L
6280 2335 mt 6253 2335 L
902 2268 mt 929 2268 L
6280 2268 mt 6253 2268 L
902 2212 mt 929 2212 L
6280 2212 mt 6253 2212 L
902 2163 mt 929 2163 L
6280 2163 mt 6253 2163 L
902 2119 mt 929 2119 L
6280 2119 mt 6253 2119 L
902 2081 mt 929 2081 L
6280 2081 mt 6253 2081 L
902 2081 mt 956 2081 L
6280 2081 mt 6226 2081 L
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

598 2134 mt
(10) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

758 2045 mt
(-2) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

902 1826 mt 929 1826 L
6280 1826 mt 6253 1826 L
902 1677 mt 929 1677 L
6280 1677 mt 6253 1677 L
902 1571 mt 929 1571 L
6280 1571 mt 6253 1571 L
902 1489 mt 929 1489 L
6280 1489 mt 6253 1489 L
902 1422 mt 929 1422 L
6280 1422 mt 6253 1422 L
902 1366 mt 929 1366 L
6280 1366 mt 6253 1366 L
902 1317 mt 929 1317 L
6280 1317 mt 6253 1317 L
902 1274 mt 929 1274 L
6280 1274 mt 6253 1274 L
902 1235 mt 929 1235 L
6280 1235 mt 6253 1235 L
902 1235 mt 956 1235 L
6280 1235 mt 6226 1235 L
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

598 1288 mt

```



```

(10) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

758 1199 mt
(-1) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

902 980 mt 929 980 L
6280 980 mt 6253 980 L
902 831 mt 929 831 L
6280 831 mt 6253 831 L
902 726 mt 929 726 L
6280 726 mt 6253 726 L
902 644 mt 929 644 L
6280 644 mt 6253 644 L
902 577 mt 929 577 L
6280 577 mt 6253 577 L
902 520 mt 929 520 L
6280 520 mt 6253 520 L
902 471 mt 929 471 L
6280 471 mt 6253 471 L
902 428 mt 929 428 L
6280 428 mt 6253 428 L
902 389 mt 929 389 L
6280 389 mt 6253 389 L
902 389 mt 956 389 L
6280 389 mt 6226 389 L
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

598 442 mt
(10) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 96 FMSR

758 353 mt
(0) s
%%IncludeResource: font Helvetica
/Helvetica /ISOLatin1Encoding 144 FMSR

902 4618 mt 6280 4618 L
902 389 mt 6280 389 L
902 4618 mt 902 389 L
6280 4618 mt 6280 389 L
902 389 mt 902 389 L
6280 389 mt 6280 389 L
448 598 448 476 448 378 449 300 448 238 448 189 448 151 448 119
448 95 449 75 448 60 448 48 902 827 13 MP stroke
448 597 448 470 448 364 449 272 448 194 448 129 448 80 448 46
448 23 449 12 448 5 448 3 902 391 13 MP stroke
448 1018 449 781 448 736 448 519 448 397 448 261 448 180 449 117
448 74 448 46 902 489 11 MP stroke
448 717 449 579 448 446 448 329 448 250 448 179 448 127 449 83
448 58 448 39 902 485 11 MP stroke
3283 4947 mt
(SNR \ (dB\)) s
544 2921 mt -90 rotate
(BER or WER) s
90 rotate

end

eplot
%%EndObject graph 1

epage
end

showpage

%%Trailer
%%BoundingBox: 52 197 552 594
%%Pages: 001
%%EOF

```

#### 49. Re: [DSP-93:1570] Re: DSP-93 on UO-22

From: crlbyers@garlic.com (C Byers)  
Date: Fri, 15 Sep 1995 08:06:07 -0700  
To: dsp-93@tapr.org  
Message-ID: <9509151509.AA17726@garlic.com>  
Rendered body type: text/plain

>>The DSP-93 performance seems to be poor on UO-22. Have tried all the PSK  
>>modems, and they all given about the same results, i.e., about 1/5 the  
>>received data rate as compared to K0-23/25.

>  
>Hint, use the FSK modems, not the PSK modems :- ) (I'm sure that was a typo)  
>

Yes, that was a typo ...

>Really, the modulation on UO-22 is quite different from the 23-25 pair. It  
>even has a DC bias that drifts around. Play around with the input gain pot.  
>If you have a way to record the audio from your radio, and play it back, it  
>makes it easier to experiment. At least that way, you are using the same  
>data.

>  
Good Idea, will experiment and see if I can get anywhere...

>Roy W0SL and I have had recording success with Hi-8 video recorders (the  
>audio track synced to a previously recorded video signal (over-dub the  
>audio)) and with Macintosh built-in audio recording and playback at 44k Hz  
>and 16 bit audio. If you have access to any of that, play with it.

>  
Will try a standard video recorder and see if I can get any where, and will  
put a sprectrum analyzer on it to see how it compares to K0-23/25.

>What is the width of your receivers IF filters. 20 kHz filters may help.

>  
I've got the standard IF, am taking the audio out of the de-modulation ...  
per the G3RUH mod.

>>Is there something I'll doing wrong ? Has anyone else had similar  
>>experiences ?

>>  
>>Carol, W9HGI

>  
>Ron W5RKN

>  
>also:  
>rparsons@bga.com

>  
>  
>

Thanks for the suggetions

Carol W9HGI  
crlbyers@garlic.com

---

#### 50. How do you read docs on dsp-93 web page?

From: John Ballard <jballard@microsoft.com>  
Date: Fri, 15 Sep 95 17:15:05 TZ  
To: netmail!<dsp-93@tapr.org>  
Message-ID: <9509160221.AA07678@netmail2.microsoft.com>  
Rendered body type: text/plain

How do you read the docs on the DSP-93 web page?

I downloaded the dsp-93 documentation from the tapr website. I  
downloaded the latest version of the acrobat reader from adobe (version  
2.1). The acrobat reader complains that 2 of the 3 .pdf files contain  
illegal characters and will not read them.

I also downloaded the Programmers Guide which is supposed to be in MS  
word format. I tried using my copy of WinWord Version 6.0 it complained  
that it could not read the file. I downloaded the latest version of the  
word viewer from the Microsoft website. It also complained about not  
being able to read the file.

Any suggestions?

Thanks,  
John KI6PS

---

## 51. Re: [DSP-93:1575] How do you read docs on dsp-93 web page?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 15 Sep 1995 20:57:27 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac7fdf471b3c@[204.181.160.71]>  
Rendered body type: text/plain

>How do you read the docs on the DSP-93 web page?  
>  
>I downloaded the dsp-93 documentation from the tapr website. I  
>downloaded the latest version of the acrobat reader from adobe (version  
>2.1). The acrobat reader complains that 2 of the 3 .pdf files contain  
>illegal characters and will not read them.  
>  
>I also downloaded the Programmers Guide which is supposed to be in MS  
>word format. I tried using my copy of WinWord Version 6.0 it complained  
>that it could not read the file. I downloaded the latest version of the  
>word viewer from the Microsoft website. It also complained about not  
>being able to read the file.  
>  
>Any suggestions?  
>  
>Thanks,  
>John KI6PS

Unless something has gone wrong with the disk files on the ftp site, I  
would suspect your downloads. Are you downloading in binary mode?

Ron W5RKN

also:  
rparsons@bga.com

---

## 52. Re: [DSP-93:1574] Re: DSP-93 on UO-22

From: fperkins@onramp.net  
Date: Fri, 15 Sep 1995 21:17:17 -0500  
To: dsp-93@tapr.org  
Message-ID: <199509160217.VAA15625@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Carol,

UO-22 reception is VERY sensitive to the low frequency cut-off of  
your connection between your receiver discriminator and the input  
to your DSP-93. I believe W0SL researched this is some detail. While  
this especially applies to the DSP-93, there is also a standard mod  
for G3RUH modems to improve UO-22 receiver performance.

You want to set the low frequency cut-off as low as possible by using  
large value AC coupling capacitors in your connection. If you are using  
ICOM 275/475, the AC coupling cannot be set too low or the TX to RX  
voltage transient will "blind" the DSP-93 to fast ACK packets from half  
duplex operation. If you only work satellite (full duplex) you don't have  
to worry about this problem.

On K0-23 I often get 850 - 950 K per pass, and occasionally break 1000 K.  
Due to the modulation problems with UO-22 (and its lower orbit), I see  
600 - 750 K.

Good Luck.

73 Frank WB5IPM

---

## 53. INTO registor

From: pcs35620@asciinet.or.jp  
Date: Sat, 16 Sep 1995 19:22:01 +0900  
To: dsp-93@tapr.org  
Message-ID: <199509161022.TAA26887@axp14.asciinet.or.jp>  
Rendered body type: text/plain

Hello all,  
I am building the kit now. I have a question about INTO pull-up  
registor, R106A on the Board 1(DSP Engine). R106A is connected to

INT0 on the circuit diagram. The circuit diagram say "not connected on production Rev 1 or earlier". BUT on my Rev 2 board dated 3/1/95, R106A is not connected to INT0. The pattern connected R106A to INT0 is CUT near R106A, because the pattern is connected to D14 pattern. Do I need R106A to connect INT0 ??

Masa, JN1GKZ Tokyo, Japan  
pcs35620@asciinet.or.jp

---

## 54. Re: [DSP-93:1575] How do you read docs on dsp-93 web page?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 16 Sep 1995 06:06:32 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130501ac805fcf4e16@[204.251.33.16]>  
Rendered body type: text/plain

>How do you read the docs on the DSP-93 web page?  
>  
>I downloaded the dsp-93 documentation from the tapr website. I  
>downloaded the latest version of the acrobat reader from adobe (version  
>2.1). The acrobat reader complains that 2 of the 3 .pdf files contain  
>illegal characters and will not read them.  
>  
>I also downloaded the Programmers Guide which is supposed to be in MS  
>word format. I tried using my copy of WinWord Version 6.0 it complained  
>that it could not read the file. I downloaded the latest version of the  
>word viewer from the Microsoft website. It also complained about not  
>being able to read the file.  
>  
>Any suggestions?  
>  
>Thanks,  
>John KI6PS

I downloaded DSP93\_Ops\_Manual.pdf this morning and it opened without problem.

So I suspect your downloading.

Ron W5RKN

also:  
rparsons@bga.com

---

## 55. Re: How do you read docs on dsp-93 web page?

From: John Ballard <jballard@microsoft.com>  
Date: Sun, 17 Sep 95 14:36:30 -0700  
To: netmail!<dsp-93@tapr.org>  
Message-ID: <9509172235.AA06069@netmail2.microsoft.com>  
Rendered body type: text/plain

Well the problem does seem to be a download problem. I connected to ftp.tapr.org using ftp and binary mode to download the files and everything can now be read ok.

Originally I had used the netscape web browser to download the files from the web page. I suspect the problem is that the URL on the hyperlink for these files in the dsp-93 web page specifies ftp://... but does not include the type suffix which would cause a web browser to use binary mode transfer. Just a guess :-). In any case reverting back to ftp solved my problem.

Thanks,  
John KI6PS  
jballard@microsoft.com

-----  
| From: Ronald G. Parsons <w5rkn@amsat.org>  
| To: <dsp-93@tapr.org>  
| Subject: [DSP-93:1576] Re: How do you read docs on dsp-93 web page?  
| Date: Friday, September 15, 1995 9:06PM  
|  
| >How do you read the docs on the DSP-93 web page?  
| >  
| >I downloaded the dsp-93 documentation from the tapr website. I  
| >downloaded the latest version of the acrobat reader from adobe (version  
| >2.1). The acrobat reader complains that 2 of the 3 .pdf files contain  
| >illegal characters and will not read them.

| >  
| >I also downloaded the Programmers Guide which is supposed to be in MS  
| >word format. I tried using my copy of WinWord Version 6.0 it complained  
| >that it could not read the file. I downloaded the latest version of the  
| >word viewer from the Microsoft website. It also complained about not  
| >being able to read the file.  
| >  
| >Any suggestions?  
| >  
| >Thanks,  
| >John KI6PS  
|  
| Unless something has gone wrong with the disk files on the ftp site, I  
| would suspect your downloads. Are you downloading in binary mode?  
|  
|  
| Ron W5RKN  
|  
| also:  
| rparsons@bga.com  
|

---

## 56. Re: [DSP-93:1580] Re: How do you read docs on dsp-93 web page?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 17 Sep 1995 18:14:30 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130502ac825a9a5eea@[204.181.160.76]>  
Rendered body type: text/plain

>Well the problem does seem to be a download problem. I connected to  
>ftp.tapr.org using ftp and binary mode to download the files and  
>everything can now be read ok.  
>  
>Originally I had used the netscape web browser to download the files  
>from the web page. I suspect the problem is that the URL on the  
>hyperlink for these files in the dsp-93 web page specifies ftp://...  
>but does not include the type suffix which would cause a web browser to  
>use binary mode transfer. Just a guess :-). In any case reverting back  
>to ftp solved my problem.  
>  
>Thanks,  
>John KI6PS  
>jballard@microsoft.com

Strange. Netscape 1.1N (Mac version) gets and opens the files without problem.

Ron W5RKN

also:  
rparsons@bga.com

---

## 57. Re: [DSP-93:1577] Re: DSP-93 on UO-22

From: crlbyers@garlic.com (C Byers)  
Date: Sun, 17 Sep 1995 22:49:22 -0700  
To: dsp-93@tapr.org  
Message-ID: <9509180552.AA18783@garlic.com>  
Rendered body type: text/plain

>Hi Carol,  
>  
>UO-22 reception is VERY sensitive to the low frequency cut-off of  
>your connection between your receiver discriminator and the input  
>to your DSP-93. I believe W0SL researched this is some detail. While  
>this especially applies to the DSP-93, there is also a standard mod  
>for G3RUH modems to improve UO-22 receiver performance.  
>  
>You want to set the low frequency cut-off as low as possible by using  
>large value AC coupling capacitors in your connection. If you are using  
>ICOM 275/475, the AC coupling cannot be set too low or the TX to RX  
>voltage transient will "blind" the DSP-93 to fast ACK packets from half  
>duplex operation. If you only work satellite (full duplex) you don't have  
>to worry about this problem.  
>  
>On KO-23 I often get 850 - 950 K per pass, and occasionally break 1000 K.  
>Due to the modulation problems with UO-22 (and its lower orbit), I see  
>600 - 750 K.

>  
>Good Luck.  
>  
>73 Frank WB5IPM  
>  
>

Hi Frank,

Thanks for the help. Have one question ... where do I put the capacitor ... assume it should be inside the DSP-93 RX line from the demod ?? Also, what value would you suggest for the FT-736R ?

73 Carol, W9HGI

---

## 58. TASM for Linux?

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Mon, 18 Sep 1995 17:48:01 GMT  
To: dsp-93@tapr.org  
Message-ID: <199509181748.26131.0@getafix>  
Rendered body type: text/plain

Does anyone know of an assembler that runs on Linux, or the availability of the source of an assembler that could be ported.

Thanks,  
John Melton, g0orx/n6lyt (g0orx@amsat.org)

---

## 59. Re: [DSP-93:1583] TASM for Linux?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 18 Sep 1995 13:50:54 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac836fbd7b91@[204.96.0.73]>  
Rendered body type: text/plain

>Does anyone know of an assembler that runs on Linux, or the  
>availability of the source of an assembler that could be ported.

>  
>Thanks,  
>John Melton, g0orx/n6lyt (g0orx@amsat.org)

If you pay the shareware fee for TASM (see the DSP-93 distribution diskettes), the source is provided.

You should read the license carefully.

Ron W5RKN

also:  
rparsons@bga.com

---

## 60. Re: [DSP-93:1578] INT0 register

From: Bob Stricklin <bstrick@dallas.net>  
Date: Mon, 18 Sep 1995 22:17:49 -0500  
To: dsp-93@tapr.org  
Message-ID: <9509190317.AA05648@dns>  
Rendered body type: text/plain

It is not necessary to connect R106A and INT0 at this time.

The hardware interrupts have not been used in any code to date. I have placed the hardware interrupts on the inter board connector in case a developer wants to use them in a future design. INT2 can be used with the serial port on the analog board but it has not to date.

As far as I know none of the existing code allows hardware interrupts. If hardware interrupts are used in the future it will be best to either place a jumper on R106A to INT0 or add a resistor at the point INT0 is connected. This would be a future design connection, possibly on another board. R106A acts as a pull up resistor to make sure the INT0 is in a known state.

Hope this did not confuse you. You have done a good job of identifying this point. I should change the schematic to indicate R106A is not on REV 2 or earlier.

At 05:37 AM 9/16/95 -0500, you wrote:  
>  
>Hello all,  
>I am building the kit now. I have a question about INT0 pull-up  
>registor, R106A on the Board 1(DSP Engine). R106A is connected to  
>INT0 on the circuit diagram. The circuit diagram say "not connected  
>on production Rev 1 or earlier". BUT on my Rev 2 board dated 3/1/95,  
>R106A is not connected to INT0. The pattern connected R106A to INT0  
>is CUT near R106A, because the pattern is connected to D14 pattern.  
>Do I need R106A to connect INT0 ??  
>  
>Masa, JN1GKZ Tokyo, Japan  
>pcs35620@asciinet.or.jp  
>  
>

Bob Stricklin, N5BRG

---

## 61. Re: [DSP-93:1582] Re: DSP-93 on UO-22

From: w6shp@amsat.org (Howard Sodja)  
Date: Mon, 18 Sep 1995 21:56:08 -0700  
To: dsp-93@tapr.org  
Message-ID: <199509190455.VAA13869@hopf.dnai.com>  
Rendered body type: text/plain

Hi Carol,

>Thanks for the help. Have one question ... where do I put the capacitor ...  
>assume it should be inside the DSP-93 RX line from the demod ?? Also, what  
>value would you suggest for the FT-736R ?

There should not be ANY capacitor between the 736's discriminator and the DSP-93. Did you remove C82, the audio shaping cap? If you have any questions on this read the FT-736 interfacing doc that can be FTPed from TAPR. I do not recall the FTP path.

I found wider filters really helped. For more info on this (and C82) download:

<http://www.amsat.org/amsat/articles/w6shp/rxtxmods.html>.

This will be published in the next AMSAT Journal. It is basically an expansion of what I wrote for the DSP-93 gang.

73

Howard Sodja, W6SHP In the SF Bay area  
AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
Microsats @ KO-23 and AO-16  
w6shp@amsat.org

---

## 62. Re: [DSP-93:1586] Re: DSP-93 on UO-22

From: crlbyers@garlic.com (C Byers)  
Date: Tue, 19 Sep 1995 08:54:47 -0700  
To: dsp-93@tapr.org  
Message-ID: <9509191558.AA27334@garlic.com>  
Rendered body type: text/plain

Hi Howard,

Thank you ... I'll download it today...

>Hi Carol,

>

>>Thanks for the help. Have one question ... where do I put the capacitor ...  
>>assume it should be inside the DSP-93 RX line from the demod ?? Also, what  
>>value would you suggest for the FT-736R ?

>

>There should not be ANY capacitor between the 736's discriminator and the  
>DSP-93. Did you remove C82, the audio shaping cap? If you have any  
>questions on this read the FT-736 interfacing doc that can be FTPed from  
>TAPR. I do not recall the FTP path.

>

>I found wider filters really helped. For more info on this (and C82) download:

>

><http://www.amsat.org/amsat/articles/w6shp/rxtxmods.html>.

>

>This will be published in the next AMSAT Journal. It is basically an

>expansion of what I wrote for the DSP-93 gang.  
>  
>73  
>Howard Sodja, W6SHP In the SF Bay area  
>AMSAT-NA 6031, AMSAT-UK 4386, TAPR 3605  
>Microsats @ KO-23 and AO-16  
>w6shp@amsat.org  
>  
>  
>

---

### 63. Any ready build units available ?

From: perfl@oslonett.no (Per Fløtten)  
Date: Tue, 19 Sep 1995 21:21:55 +0200  
To: dsp-93@tapr.org  
Message-ID: <199509191921.VAA22649@hasle.oslonett.no>  
Rendered body type: text/plain

I'm unfortunately not able to do any kit building of any kind myself due to allergy, and I'm looking for a ready built dsp-93 unit ?  
Have been owner of a dsp-22232 but sold it recently because I would like to have a dsp-modem that I can tinker a little with myself. I'm more of an experimenter than operator and would like to experiment a little with dsp algorithms.

If anyone should have a ready built unit on the self - not being used, please send me a mail.

73's Per Floetten LA5NIA. QTH --> Kirkenes, Norway.

perfl@oslonett.no

---

### 64. New Link Added to DSP-93 Web Page

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 20 Sep 1995 00:32:20 -0500 (CDT)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199509200532.AAA05359@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

We have added a new link on the DSP-93 Web Page.

<http://www.cera.com/dsp.htm>

Has some good links to other DSP related topics.  
Thanks to Tom, N5EG, for passing this one along.

Cheers - Greg

---

### 65. DSP-93 and Linux.

From: j.d.melton.slh0613@oasis.icl.co.uk  
Date: Thu, 21 Sep 1995 10:45:25 GMT  
To: dsp-93@tapr.org  
Message-ID: <199509211045.13489.0@getafix>  
Rendered body type: text/plain

Hi, I am interested in finding other DSP-93 builders that are using (or intending to use) the DSP-93 with Linux. I now have an X-Windows (Motif) interface working (commands and object download), and the beginnings of a TMS320C25 assembler that generates code correctly for testleds, testbuzz and d93scope. If you would like to help test/develop this interface, send me

a mail message. The intent is to release this as a Linux package for the DSP-93 and will include all the source code of the utilities and the assembler.

73's

John Melton, g0orx/n6lyt (g0orx@amsat.org)

---

### 66. Re: INT0 register

From: pcs35620@asciinet.or.jp  
Date: Fri, 22 Sep 1995 07:52:00 +0900



To: dsp-93@tapr.org  
Message-ID: <199509212252.HAA11962@axp14.asciinet.or.jp>  
Rendered body type: text/plain

Hello Bob, N5BRG,

Thank you for the reply about my INT0 register question. I have understood all the situation.

I have built a board 1. I am looking forward to next weekend.

Thanks,

Masa, JN1GKZ Tokyo, Japan  
pcs35620@asciinet.or.jp

---

## 67. PacComm TNC for DSP-93

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Thu, 21 Sep 95 19:41:23 UTC  
To: dsp-93@tapr.org  
Message-ID: <6122@paccomm.com>  
Rendered body type: text/plain

Hello All,

I'm off to the circuit board house to pick up 100 DSP-93 boards!

I won't promise first deliveries till I see them, but it could be as little as a week away.

More tomorrow or Saturday.

-----  
Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org  
+ (813) 874-2980 Fax: + (813) 872-8696 BBS: + (813) 874-3078 (V.34)  
PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

---

## 68. Re: [DSP-93:1592] PacComm TNC for DSP-93

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Fri, 22 Sep 1995 01:12:51 +0000  
To: dsp-93@tapr.org  
Message-ID: <199509220116.VAA15209@camel.campbell.edu>  
Rendered body type: text/plain

Great news, Gwyn! Check your paper work, and remember who was "order number 1"! ;-)

Will be nice unhook that MFJ...

At 19:13 9/21/95 -0500, you wrote:

>Hello All,

>

>I'm off to the circuit board house to pick up 100 DSP-93 boards!

>

>I won't promise first deliveries till I see them, but it could  
>be as little as a week away.

>

>More tomorrow or Saturday.

>

>

>-----  
>Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org  
>  
>+ (813) 874-2980 Fax: + (813) 872-8696 BBS: + (813) 874-3078 (V.34)  
>  
>PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618  
>  
>

Mark L. Hammond [KC4EBR]

---

## 69. Re: [DSP-93:225] Build Update 1/25/95

From: DTownsend@aol.com  
Date: Thu, 21 Sep 1995 21:49:44 -0400  
To: dsp-93@tapr.org  
Message-ID: <950921214942\_105562362@mail02.mail.aol.com>

Rendered body type: text/plain

I seam to have been dropped from the auto-mailing of dsp93 build updates.  
Please put me back on the list. Thank you.

index dsp-93

---

## 70. Re: [DSP-93:1594] Re: Build Update 1/25/95

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 21 Sep 1995 21:13:19 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac87cbcd9ed9@[204.181.160.12]>  
Rendered body type: text/plain

>I seam to have been dropped from the auto-mailing of dsp93 build updates.  
>Please put me back on the list. Thank you.  
>  
>index dsp-93

The build updates are posted when needed to this list. If you are on the list, you get them. They are also archived on ftp.tapr.org in the /tapr/dsp93/updates/ directory.

Ron W5RKN

also:  
rparsons@bga.com

---

## 71. Re: [DSP-93:1593] Re: PacComm TNC for DSP-93

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 22 Sep 1995 00:02:04 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199509220502.AAA22649@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Gwyn -- although I think most the folks on here will not get confused...

Let me point out that what Gwyn is talking about here is not a DSP-93 unit, but a TNC that paccomm is making that will fit the same form factor....much like what TAPR is currently doing called the TAPR DSP-93/TNC-95 unit.

Don't want to think that folks think they are getting a \$430 DSP unit for a little more than a 100 :-)

Using the DSP-93 in the name will confuse some.

Cheers - Greg

According to Mark L. Hammond:

>  
> Great news, Gwyn! Check your paper work, and remember who was "order number  
> 1"! ;-)  
>  
> Will be nice unhook that MFJ...  
>  
>  
> At 19:13 9/21/95 -0500, you wrote:  
> >Hello All,  
> >  
> >I'm off to the circuit board house to pick up 100 DSP-93 boards!  
> >  
> >I won't promise first deliveries till I see them, but it could  
> >be as little as a week away.  
> >  
> >More tomorrow or Saturday.  
> >  
> >  
> >-----  
> >Gwyn Reedy, WIBEL            gwyn@paccomm.com            WIBEL@amsat.org  
> >  
> >+(813) 874-2980            Fax:+(813) 872-8696            BBS: +(813) 874-3078 (V.34)  
> >  
> >PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618  
> >  
> >  
>

>  
> Mark L. Hammond [KC4EBR]  
>  
>

---

## 72. A/D converter frequency response.

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@vm.gmd.de>  
Date: Fri, 22 Sep 95 10:45:05 EST  
To: <dsp-93@TAPR.ORG>  
Message-ID: <199509220915.EAA19325@sys1.tapr.org>  
Rendered body type: text/plain

The TLC32044 chip is used in the DSP93 and normally the signals sampled are in the low frequency range below 10 kHz. The switched capacitor input filter gives a LP cut off which is given by the parameter RA. With RA = 2, the lowest value possible, I get a LP filter cut off around 32 kHz.

I have been thinking about the possibility to undersample a signal directly after an IF filter e.g. at 455 kHz. But now my problem is that the LP filter seems to be included all the time and cannot be bypassed. I have seen that the HP section can be excluded. Of course the sampling of my IF signal has to be relatively fast to get this working.

Reference: TI Linear Circuits Data Acquisition and Conversion  
Data Book Volume 2. SLYD004.

Are there any ideas on this subject?

Boris DJ0EX SM0GJ

End of Message

---

## 73. Re: [DSP-93:1596] Re: PacComm TNC for DSP-93

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Fri, 22 Sep 95 05:53:52 UTC  
To: dsp-93@tapr.org  
Message-ID: <6150@paccomm.com>  
Rendered body type: text/plain

Greg and DSP-93 SIG members:

Greg is correct. In the subject of my message I wrote TNC for DSP-93, but in the body I shortened that to DSP-93 boards. Should have said DSP-93 TNC boards.

Just to be clear, this is a PacComm offering of a TNC which is made to easily integrate into the DSP-93 case and circuit board environment. This is not TAPR sponsored nor is it connected with the TAPR TNC development project.

I appreciate the opportunity to use this forum to update DSP-93 owners about the progress of this project.

73,  
Gwyn

sponsored = sponsored, HI

\_\_\_\_\_  
Gwyn Reedy, W1BEL      gwyn@paccomm.com      W1BEL@amsat.org

+ (813) 874-2980      Fax: + (813) 872-8696      BBS: + (813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

---

## 74. Re: [DSP-93:1597] A/D converter frequency response.

From: dibene@VNET.IBM.COM (Alberto di Bene)  
Date: Fri, 22 Sep 95 17:14:49 GMT  
To: DSP-93@TAPR.ORG  
Message-ID: <199509221530.KAA24769@sys1.tapr.org>  
Rendered body type: text/plain

In a previous message, you wrote:

>  
>The TLC32044 chip is used in the DSP93 and normally the signals  
>sampled are in the low frequency range below 10 kHz. The switched  
>capacitor input filter gives a LP cut off which is given by the  
>parameter RA. With RA = 2, the lowest value possible, I get a  
>LP filter cut off around 32 kHz.

>  
>I have been thinking about the possibility to undersample a signal  
>directly after an IF filter e.g. at 455 kHz. But now my problem  
>is that the LP filter seems to be included all the time and  
>cannot be bypassed. I have seen that the HP section can be  
>excluded. Of course the sampling of my IF signal has to be  
>relatively fast to get this working.  
>Reference: TI Linear Circuits Data Acquisition and Conversion  
>Data Book Volume 2. SLYD004.  
>Are there any ideas on this subject?  
>  
>Boris DJ0EX SM0GJ  
>  
>End of Message

You should use the TMS32040 instead. It allows you to switch off the anti-aliasing filter programmatically. If memory serves me well, the two chips are pin-compatible and very similar from a programming point of view. Not owning a DSP-93, this is as far as I can tell.

Keith Larsen from TI wrote that he tested the TMS32040 (with the filter off) up to 1 MHz, with exactly the same purpose of sub-sampling an IF signal to bring it in the audio range for further processing.

Alberto di Bene, I2PHD                      dibene@vnet.ibm.com                      i2phd@amsat.org  
-----  
Purified Air Environment. Please do not open Windows.                      )  
-----

---

## 75. PacComm TNC for DSP-93

From: n7ryw@teleport.com (William Roth)  
Date: Fri, 22 Sep 1995 10:47:02 -0700  
To: dsp-93@tapr.org  
Message-ID: <199509221745.KAA18374@desiree.teleport.com>  
Rendered body type: text/plain

Gwyn,

What exactly does the TNC do? I'm looking for something that will handle the DSP loading process as well as act as a TNC once that is done. This is because I will be taking the DSP-93 on my sailboat, and I don't have a lot of comm ports on the computer for the boat (just 2, it's a laptop).

Maybe I just need to build a RISC or 8051 board like there should have been to begin with.

>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

## 76. Re: [DSP-93:1600] PacComm TNC for DSP-93

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Fri, 22 Sep 1995 18:43:16 +0000  
To: dsp-93@tapr.org  
Message-ID: <199509221847.OAA24930@camel.campbell.edu>  
Rendered body type: text/plain

Bill,

Check out DSP-93:1127, 1451, 1445, 1435 from the listserv mail archives.

These are a few messages I found dealing with this unit. It is supposed to require only ONE comport that feeds commands to either the DSP-93 or the TNC board. Simpler indeed. Hope this helps.

At 13:01 9/22/95 -0500, you wrote:

>Gwyn,  
>  
>What exactly does the TNC do? I'm looking for something that will handle the  
>DSP loading process as well as act as a TNC once that is done. This is  
>because I will be taking the DSP-93 on my sailboat, and I don't have a lot  
>of comm ports on the computer for the boat (just 2, it's a laptop).  
>  
>Maybe I just need to build a RISC or 8051 board like there should have been  
>to begin with.  
>>From Bill, n7ryw@teleport.com  
>>Amsat NA Life Member #2109  
>

>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 77. Re: [DSP-93:1598] Re: PacComm TNC for DSP-93

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 22 Sep 1995 14:10:28 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199509221910.OAA06255@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Thanks Gwyn. From the comments at the DCC, a lot of people are looking forward to your new TNC.

Thanks for accommodating the DSP-93 form factor.

Cheers - Greg

According to Gwyn Reedy, W1BEL:

>  
> Greg and DSP-93 SIG members:  
>  
> Greg is correct. In the subject of my message I wrote TNC for DSP-93, but  
> in the body I shortened that to DSP-93 boards. Should have said DSP-93  
> TNC boards.  
>  
> Just to be clear, this is a PacComm offering of a TNC which is made to  
> easily integrate into the DSP-93 case and circuit board environment.  
> This is not TAPR sponsored nor is it connected with the TAPR TNC  
> development project.  
>  
> I appreciate the opportunity to use this forum to update DSP-93 owners  
> about the progress of this project.  
>  
> 73,  
> Gwyn  
>  
> sponsored = sponsored, HI  
>  
> -----  
> Gwyn Reedy, W1BEL            gwyn@paccomm.com            W1BEL@amsat.org  
>  
> +(813) 874-2980            Fax:+(813) 872-8696            BBS: +(813) 874-3078 (V.34)  
>  
> PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618  
>

---

## 78. Re: [DSP-93:1600] PacComm TNC for DSP-93

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 22 Sep 1995 14:33:28 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199509221933.OAA09573@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Hi Bill -- thought I would throw in an update on the TNC-95 here.

The TAPR DSP-93/TNC-95 which is not in alpha testing, will do what you want, or atleast it is suppose to. It will sit ontop of the DSP-93, and provide a single serial port into the TNC which will then feed either the data port or DSP-93 serial port. That is what the design doc says.

Keep an eye out here for further information.

Cheers - Greg

According to William Roth:

>  
> Gwyn,  
>  
> What exactly does the TNC do? I'm looking for something that will handle the  
> DSP loading process as well as act as a TNC once that is done. This is  
> because I will be taking the DSP-93 on my sailboat, and I don't have a lot  
> of comm ports on the computer for the boat (just 2, it's a laptop).  
>  
> Maybe I just need to build a RISC or 8051 board like there should have been  
> to begin with.

> >From Bill, n7ryw@teleport.com  
> Amsat NA Life Member #2109  
>  
>  
>

---

## 79. Re: [DSP-93:1601] Re: PacComm TNC for DSP-93

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 22 Sep 1995 14:35:10 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199509221935.OAA09785@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

I think you are talking about the TAPR TNC-95 here Mark. From what I understand of Gwyn's board...it provides just a TNC function, but fits the DSP-93 form factor. You will still need a second serial port to talk to the DSP-93 with the PacComm TNC.

Please correct me Gwyn if I have this wrong.

Cheers - Greg

According to Mark L. Hammond:

>  
> Bill,  
>  
> Check out DSP-93:1127, 1451, 1445, 1435 from the listserv mail archives.  
>  
> These are a few messages I found dealing with this unit. It is supposed to  
> require only ONE comport that feeds commands to either the DSP-93 or the TNC  
> board. Simpler indeed. Hope this helps.  
>  
>  
> At 13:01 9/22/95 -0500, you wrote:  
> >Gwyn,  
> >  
> >What exactly does the TNC do? I'm looking for something that will handle the  
> >DSP loading process as well as act as a TNC once that is done. This is  
> >because I will be taking the DSP-93 on my sailboat, and I don't have a lot  
> >of comm ports on the computer for the boat (just 2, it's a laptop).  
> >  
> >Maybe I just need to build a RISC or 8051 board like there should have been  
> >to begin with.  
> >>From Bill, n7ryw@teleport.com  
> >Amsat NA Life Member #2109  
> >  
> >  
> >  
> >  
> >  
> >  
> Mark L. Hammond [KC4EBR]  
>  
>

---

## 80. Re: [DSP-93:1603] Re: PacComm TNC for DSP-93

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 22 Sep 1995 14:59:08 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199509221959.OAA11009@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to Greg Jones:

>  
> Hi Bill -- thought I would throw in an update on the TNC-95 here.  
>  
> The TAPR DSP-93/TNC-95 which is not in alpha testing, will do what you want.  
                                    ^^^  
                                    now (opps :\_(

Cheers - Greg

---

## 81. Re: [DSP-93:1604] Re: PacComm TNC for DSP-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 22 Sep 1995 15:07:06 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac88c74dbcf0@[204.96.0.78]>

Rendered body type: text/plain

I think you are wrong, Greg. At my last discussion with Gwyn, they were providing a TNC to DSP-93 "by-pass" to permit loading of DSP code through the PacComm TNC. I have asked Gwyn to post here a more complete description of their TNC. The current specs are hidden away in a variety of messages.

Ron

```
>I think you are talking about the TAPR TNC-95 here Mark. From what I
>understand
>of Gwyn's board...it provides just a TNC function, but fits the DSP-93 form
>factor. You will still need a second serial port to talk to the DSP-93 with
>the PacComm TNC.
>
>Please correct me Gwyn if I have this wrong.
>
>Cheers - Greg
>
>According to Mark L. Hammond:
>>
>> Bill,
>>
>> Check out DSP-93:1127, 1451, 1445, 1435 from the listserv mail archives.
>>
>> These are a few messages I found dealing with this unit. It is supposed to
>> require only ONE comport that feeds commands to either the DSP-93 or the TNC
>> board. Simpler indeed. Hope this helps.
>>
>>
>> At 13:01 9/22/95 -0500, you wrote:
>> >Gwyn,
>> >
>> >What exactly does the TNC do? I'm looking for something that will handle the
>> >DSP loading process as well as act as a TNC once that is done. This is
>> >because I will be taking the DSP-93 on my sailboat, and I don't have a lot
>> >of comm ports on the computer for the boat (just 2, it's a laptop).
>> >
>> >Maybe I just need to build a RISC or 8051 board like there should have been
>> >to begin with.
>> >>From Bill, n7ryw@teleport.com
>> >Amsat NA Life Member #2109
>> >
>> >
>> >
>> >
>>
>> Mark L. Hammond [KC4EBR]
>>
>>
```

Ron W5RKN

also:  
rparsons@bga.com

---

## 82. Re: [DSP-93:1606] Re: PacComm TNC for DSP-93

From: Greg Jones <gjones@tenet.edu>  
Date: Fri, 22 Sep 1995 20:50:15 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199509230150.UAA13184@beall.tenet.edu>  
Rendered body type: text/plain

Great. I got the impression at the DCC that this was not the case.

greg

According to Ronald G. Parsons:

```
>
> I think you are wrong, Greg. At my last discussion with Gwyn, they were
> providing a TNC to DSP-93 "by-pass" to permit loading of DSP code through
> the PacComm TNC. I have asked Gwyn to post here a more complete description
> of their TNC. The current specs are hidden away in a variety of messages.
>
> Ron
>
> >I think you are talking about the TAPR TNC-95 here Mark. From what I
> >understand
> >of Gwyn's board...it provides just a TNC function, but fits the DSP-93 form
```

```

> >factor. You will still need a second serial port to talk to the DSP-93 with
> >the PacComm TNC.
> >
> >Please correct me Gwyn if I have this wrong.
> >
> >Cheers - Greg
> >
> >According to Mark L. Hammond:
> >
> >> Bill,
> >>
> >> Check out DSP-93:1127, 1451, 1445, 1435 from the listserv mail archives.
> >>
> >> These are a few messages I found dealing with this unit. It is supposed to
> >> require only ONE comport that feeds commands to either the DSP-93 or the TNC
> >> board. Simpler indeed. Hope this helps.
> >>
> >>
> >> At 13:01 9/22/95 -0500, you wrote:
> >> >Gwyn,
> >> >
> >> >What exactly does the TNC do? I'm looking for something that will handle the
> >> >DSP loading process as well as act as a TNC once that is done. This is
> >> >because I will be taking the DSP-93 on my sailboat, and I don't have a lot
> >> >of comm ports on the computer for the boat (just 2, it's a laptop).
> >> >
> >> >Maybe I just need to build a RISC or 8051 board like there should have been
> >> >to begin with.
> >> >>From Bill, n7ryw@teleport.com
> >> >>Amsat NA Life Member #2109
> >> >
> >> >
> >> >
> >> >
> >> >
> >> >
> >> Mark L. Hammond [KC4EBR]
> >>
> >>
>
> Ron W5RKN
>
> also:
> rparsons@bga.com
>
>
>

```

---

### 83. PacComm TNC for the TAPR/AMSAT DSP-93

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
 Date: Fri, 22 Sep 95 23:42:32 UTC  
 To: dsp-93@tapr.org  
 Message-ID: <6223@paccomm.com>  
 Rendered body type: text/plain

W5RKN suggested I repost the characteristics of the above mentioned product.  
 I have been out of town today (at the PCS Exhibition in Orlando) and upon  
 getting back see that there is indeed some confusion. If the following  
 does not answer all the questions, please post your questions.

This TNC uses the Zilog

\_\_\_\_\_  
 Gwyn Reedy, W1BEL      gwyn@paccomm.com      W1BEL@amsat.org

+(813) 874-2980      Fax: +(813) 872-8696      BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

---

### 84. PacComm TNC for the TAPR/AMSAT DSP-93

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
 Date: Fri, 22 Sep 95 23:45:56 UTC  
 To: dsp-93@tapr.org  
 Message-ID: <6224@paccomm.com>  
 Rendered body type: text/plain

W5RKN suggested I repost the characteristics of the above mentioned product.  
 I have been out of town today (at the PCS Exhibition in Orlando) and upon  
 getting back see that there is indeed some confusion. If the following



does not answer all the questions, please post your questions.

This TNC uses the Zilog Z-181 microprocessor which is the same one used on the PacComm PicoPacket. Contained in this package are a Z-80 CPU, one channel of 8530 SCC, a UART, some parallel I/O lines, and a memory management unit which expands the memory space from 64k to 1mb.

The circuit board is sized almost identically to the DSP-93 boards. I think the length is the same, but the width may be .050 more or so - looks the same size to the eye and certainly fits properly into the DSP-93 cabinet. The following items/steps have been taken to allow easy installation and interface to the DSP-93 unit:

- Mounting holes match with DSP-93 boards.
- Spacers and mounting screws provided.
- No components are mounted in places where a height problem might exist; under the DB-25 connector, front panel potentiometer, etc.
- Pins are mounted to mate with the 4 conductor AC supply connector.
- A connector is mounted to mate with the DSP-93 modem disconnect header.
- A set of pins is provided for connecting to the IDC (ribbon cable) connector on the DB-25 ribbon cable (which goes to the modem disconnect header on a standard DSP-93) for the RS-232 serial port to the PC.
- Provision is made for the user to wire from the TNC to the header at the DE-9 serial port on the DSP-93. This uses the second UART port on the TNC to drive the DSP loading port.

Not sure how clear that is since I didn't use J- reference numbers. Try this word picture.

Unless you want to have the TNC LEDs visible through the front panel, and if you don't need the DSP load via the TNC function, the TNC can be installed with no soldering and no metal work other than bolting in the spacers and mounting screws.

This is done by having mating connectors (or pins as the case may be) which plug into the DSP-93 top board power connector (JP205) and into the 20 pin modem disconnect header that is normally connected to the DB-25 on the rear panel via a ribbon cable. The ribbon cable connector which was removed from the modem header connector is connected instead to a similar connector on the TNC and allows the DB25 to become a proper serial port for connection to the TNC.

The board fits above the upper DSP-93 board, but under the DB25, front panel pot, power input connector, etc.

If you want to drill holes in the front panel, there are LEDs for DCD PTT, STA, CON, and power. The holes for these LEDs do not interfere with any of the front panel markings.

As mentioned above, if you want the capability to load the DSP via the same port as the TNC, you have to wire a short cable from the TNC to the set of holes behind the 9 pin EIA connector (labeled serial port). If you need some pins or a connector, they will be provided. (I have the unit with me, but the TNC board is installed and I can't see the exact labels or configuration on that port. Its late and I'm not going to take it apart now.)

There are four lines coming up on the 20 pin modem header which need to be pulled up or grounded for frequency and PTT selection. Each of those lines goes to a 3 pin header wired so that a 2 pin jumper may be applied to each line to select either pull-up or grounding.

This TNC will NOT run a TNC-2 EPROM since it uses an SCC and not the SIO chip. The code has all the familiar TAPR commands however, and you should not notice the difference.

Baud rates for all ports are set by a software command. Baud rates up to 57600 are supported, but there may be a problem getting 38.4 - I don't remember. It has to do with the clock frequency (9.2 MHz) and the available divider values.

The EPROM will have KISS and support a 'pass through' function to allow the PC serial port to be effectively tied to the DSP serial port.

At this time, the KISS and pass through functions need some more debugging. Porting the KISS requires a number of port address changes and one or more got overlooked. The passthrough function is also written but needs work. Neither should be any problem except one of scheduling. They WILL get done.

The TNC draws only about 60 ma, so should not overload the power cube.

That's all I can think of now.

Price: \$99 plus shipping of which \$10 gets donated to TAPR.  
Availability: Next week or soon thereafter.

About 10 units are spoken for. We have 99 bare boards in stock, but since Z-181 processors are in short supply, we will only build the exact amount to fill the orders and if we run out of CPUs, there may be a 2-3 week delay till the next 250 get here.

-----  
Gwyn Reedy, WIBEL      gwyn@paccomm.com      WIBEL@amsat.org  
+ (813) 874-2980      Fax: + (813) 872-8696      BBS: + (813) 874-3078 (V.34)  
PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

---

## 85. Re:TNC-95 Capabilities

From: n7ryw@teleport.com (William Roth)  
Date: Sat, 23 Sep 1995 10:39:27 -0700  
To: dsp-93@tapr.org  
Message-ID: <199509231737.KAA28016@desiree.teleport.com>  
Rendered body type: text/plain

>Hi Bill -- thought I would throw in an update on the TNC-95 here.  
>  
>The TAPR DSP-93/TNC-95 which is not in alpha testing, will do what you want.  
>or atleast it is suppose to. It will sit ontop of the DSP-93, and provide a  
>single serial port into the TNC which will then feed either the data port or  
>DSP-93 serial port. That is what the design doc says.

This is good news, to be sure! You see, I'm setting the unit up for 12vdc operation. I have the +-5V setup going and the unit is running good, but I'm also looking for a way to eliminate the +-12v used on the level converter. I have a Linear Tech. IC that will do the job (LT1130ACS), but it will require me to etch an adapter PCB. I would rather avoid that, if possible. I've already made up one board that holds a 3 amp 5v regulator IC and a dc-dc convertor.

I would rather just bypass the level convertor altogether and send the data straight to the new TNC. That would kill two birds with one stone. So, does the TNC-95 do what I am thinking here? In other words, is the interface to the DSP-93 serial port at TTL or RS-232? Also, does it have the ability to hold EPROMS (or BB SRAMS) for the TNC code, or will that still need to be loaded in from a PC? I was hoping to avoid that bit of klunkiness as well.  
>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

## 86. Correction...

From: "Alberto di Bene (xx39-2-596.25744)" <dibene@VNET.IBM.COM>  
Date: Mon, 25 Sep 95 12:08:42 GMT  
To: dsp-93@tapr.org  
Message-ID: <199509251111.GAA30148@sys1.tapr.org>  
Rendered body type: text/plain

> You should use the TMS32040 instead      ...

Of course I meant the TLC32040. Sorry for the confusion...

Alberto di Bene      dibene@vnet.ibm.com      i2phd@amsat.org

---

## 87. Re: [DSP-93:1592] PacComm TNC for DSP-93

From: Carol Byers <crlbyers@garlic.com>  
Date: Mon, 25 Sep 1995 10:33:18 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.950925103211.38891A-100000@garlic.com>  
Rendered body type: text/plain

Let me know when they are ready ... I'll probably want one.

Carol, W9HGI

---

## 88. W9GR soft for DSP-93

From: Antonio Fernandez <100341.640@compuserve.com>  
Date: 25 Sep 95 15:41:23 EDT  
To: DSP-93 Mail List <dsp-93@tapr.org>  
Message-ID: <950925194122\_100341.640\_EHQ24-1@CompuServe.COM>  
Rendered body type: text/plain

Hi gang,

Are the W9GR SSB and noise reduction filters ported to the DSP-93 already released?

If it's the case, where can I ftp the OBJ files. I didn't find them in ftp.tapr.org.

Best 73 de Toni

-----  
Antonio Fernandez  
Las Rozas, MADRID. Spain  
e-mail: ea4le@amsat.org  
-----  
Support Phase 3-D, Join AMSAT!  
-----

---

## 89. Re: [DSP-93:1613] W9GR soft for DSP-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 25 Sep 1995 16:54:08 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac8cd4b074a6@[204.96.0.135]>  
Rendered body type: text/plain

The file is ftp://ftp.tapr.org/tapr/dsp93/upload/wingr903.zip

I guess it was never transferred to the appropriate directory (software).

Ron W5RKN

>Hi gang,  
>  
>Are the W9GR SSB and noise reduction filters ported to the DSP-93 already  
>released?  
>  
>If it's the case, where can I ftp the OBJ files. I didn't find them in  
>ftp.tapr.org.  
>  
>Best 73 de Toni  
>  
>-----  
>Antonio Fernandez  
>Las Rozas, MADRID. Spain  
>e-mail: ea4le@amsat.org  
>-----  
>Support Phase 3-D, Join AMSAT!  
>-----

Ron W5RKN

also:  
rparsons@bga.com

---

## 90. TI DSP development tools and speech compression code

From: Ron Curry <recurry@insighttec.com>  
Date: Mon, 25 Sep 1995 21:29:44 -0700  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BA8B8E.08EA4E20@yankee.insighttec.com>  
Rendered body type: text/plain

1. Does anyone know if there is an inexpensive C compiler available for TI DSP's? The TI product costs \$1500!

2. I'm looking for VSELP, CELP, LPC, etc speech compression code to run on DSP-93 or the TI DSK. Can anyone help?

Thanks,  
Ron Curry ke6wed

---

## 91. W9GR

From: "Alberto di Bene (xx39-2-596.25744)" <dibene@VNET.IBM.COM>  
Date: Tue, 26 Sep 95 10:32:03 GMT  
To: dsp-93@tapr.org  
Message-ID: <199509261005.FAA32603@sys1.tapr.org>  
Rendered body type: text/plain

I gave a look at the WINGR.INI file for the DSP-93. It would be interesting if the author of the porting would explain the rationale behind the choice of the values for the beta and the decay parameters, specially in relation with the various bands. From a quick look the beta seems a bit high, and the decay a tad low, in comparison with some experimental results I had programming a denoiser filter with a TI 'C50 DSK. It would be interesting to discover whether the differences are caused by different audio levels (as I suspect) or by differences in the subjective evaluation of the effectiveness of the denoiser function. As a reference, I used an audio level of roughly 1 Veff input to the DSK, with a filter length of 128, a correlation delay of 8 taps, beta value 655 (Q15 format) and decay 32754 (Q15 format). The decay is computed each sampling cycle for all of the coefficients, unlike the original W9GR code, which did one coefficient at a time each sampling cycle.

Alberto di Bene, I2PHD      dibene@vnet.ibm.com      i2phd@amsat.org  
-----  
Purified Air Environment. Please do not open Windows.      )  
-----

---

## 92. WINGR officially released

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 26 Sep 1995 09:30:57 -0400  
To: dsp-93@tapr.org  
Message-ID: <v01530500ac8d76a4909c@[152.38.1.2]>  
Rendered body type: text/plain

Hello Gang,

I am announcing the release of the WinGR code by Mike, N4IRR. This is the long awaited port of the W9GR noise filter/notch/audio DSP code.

It is called "wingr903.zip" and can be found by anonymous ftp under the ~dsp93/software directory as:

/u1/ftp/tapr/dsp93/software/wingr903.zip

I think you will all enjoy it. Mike, N4IRR (the author) has been extremely busy lately, so questions to him regarding the code may go unanswered for a while. Do the best you can with it!

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 93. First Impressions

From: jtn@te-cats.COM (John T. Nogatch)  
Date: Tue, 26 Sep 1995 07:23:19 -0700  
To: dsp-93@tapr.org  
Message-ID: <9509261423.AA10698@te-cats.COM>  
Rendered body type: text/plain

I enjoyed this kit! My compliments to the designers, parts procurement, & documentation people.

I look forward to learning, using, & hopefully programming the DSP-93. I'm amazed I had not read about it until recently. (I must be reading the wrong magazines.)

While the construction is still fresh in my mind, I have recorded my comments on the following construction details:

- Extra, Missing, & Optional Parts
- PC Boards
- Macintosh Serial Cable
- Box Assembly
- Operation Quirks
- Software

-----  
Extra, Missing, & Optional Parts:  
Extra:  
    a 22 pf capacitor, a pair of 4-40 lockwashers.

Missing:  
a 74S03.

Optional:  
U117, U118, R108, C124, C125: I would like to have completed this soldering now instead of later.  
  
U106, U107, U110, U111: Could I benefit from installing additional SRAM, or is it pending on a future change?

> ...scrub the board with household cleanser...

The boards I received are double-sided, plated-through, pre-tinned, silk screened beauties. I saw no reason to torture them.

The holes for the IC sockets are a little large, allowing the sockets considerable play until they're soldered. The note about J100 was well timed.

-----  
Macintosh Serial Cable:  
> ...Purchase a 'MiniDIN-8 to DB-25  
> male' (hardware handshake type preferred) and  
> connect the cable to an adapter DB-25 female/DB-  
> 9 male (Radio Shack 26-287).

I don't know where you guys shop, but "preferred" is not an option for me. "Take it or leave it" is the only choice I get. Besides, after building something as complex as the DSP-93, I think I can handle the wiring of a DB-9P.

| Mac MiniDIN 8 male | DSP-93 DB-9P    |
|--------------------|-----------------|
| -----              | -----           |
| 1 HSKout           | 4 & 7 DTR & RTS |
| 2 HSKin            | 8 CTS           |
| 3 TxData-          | 3 TD            |
| 4 GND              | 5 GND           |
| 5 RxData-          | 2 RD            |
| 6 TxData+          | (no connection) |
| 7 (no connection)  | (no connection) |
| 8 RxData+          | 5 GND           |
| - Shield           | (no connection) |

I believe this cable is wired correctly, but the DSP-93 never asserts CTS. If anyone knows why not, I'd like to hear the explanation!

-----  
Box Assembly:  
> ...three holes in a row punched closer to that end.  
Why are the 3 holes there?

> ...take some care to not scratch the front panel.  
It looks like the hole for the reset button was cut large to accomodate a variety of possible switches. A flat washer is needed to avoid scratching the panel. A deep-well socket wrench helps too. The volume control had a flat washer, but it needed a lockwasher. A deep-well Metric socket was used here. Also, point the volume control lugs down, so they do not come close to the chassis. The Speaker jack can also benefit from a lockwasher.

> ...the other end of the DB-25 cable....  
There are 2 connectors at the other end! Is one for the TNC board that is not available yet? When can I get one?

-----  
Operation Quirks:  
The red & green LEDs have diffusers, and are easy to see. The yellow LEDs have no diffusers, and are only bright when you look directly into them. (I can even see the chips and the bonding wires.)

When the volume control is near minimum, there is a lot of 60 Hz hum. I assume it's the proximity of the power switch.

-----  
Software:  
The Scope window is a bit too tall for a Powerbook screen.

I can see I'm going have to study the software. The Wave

Data was easy to understand, but is it really necessary  
to store a square wave in a lookup table?

-----  
-----  
John Nogatch WA6BCW jtn@te-cats.com

---

## 94. Re: [DSP-93:1618] First Impressions

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 26 Sep 1995 15:27:51 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130502ac8e10539512@[204.181.160.86]>  
Rendered body type: text/plain

John Nogatch WA6BCW

Thanks for your comments.

My comments on a few items follow:

> U106, U107, U110, U111: Could I benefit from installing  
> additional SRAM, or is it pending on a future change?

No current software requires additional RAM. Wait 'til you need it.

>-----  
>> ...the other end of the DB-25 cable...  
>There are 2 connectors at the other end! Is one for the  
>TNC board that is not available yet? When can I get one?

The "extra" connector is useful as a test point for probing these lines if  
needed. Also, I put my IO port initialization jumpers on a header plugged  
in here.

>-----  
>When the volume control is near minimum, there is a lot of  
>60 Hz hum. I assume it's the proximity of the power switch.

I'd like to know the cause of that also!

>-----  
>Software:  
>The Scope window is a bit too tall for a Powerbook screen.

Sorry about that! I guess I forget that not all screens are 640x480 or larger.  
Get a bigger PowerBook :-)

>I can see I'm going have to study the software. The Wave  
>Data was easy to understand, but is it really necessary  
>to store a square wave in a lookup table?

Where is this done? Perhaps in the function generator. I didn't write that  
code but I'd bet it was to make the code easy (all waveforms use a lookup  
table).

Ron W5RKN

also:  
rparsons@bga.com

---

## 95. Re: [DSP-93:1619] Re: First Impressions

From: mcdermot@rdxsunhost.aud.alcatel.com (Tom Mcdermott)  
Date: Tue, 26 Sep 95 16:21:47 CDT  
To: dsp-93@tapr.org  
Message-ID: <9509262121.AA08881@eagle.aud.alcatel.com>  
Rendered body type: text/plain

>  
> >I can see I'm going have to study the software. The Wave  
> >Data was easy to understand, but is it really necessary  
> >to store a square wave in a lookup table?  
>  
> Where is this done? Perhaps in the function generator. I didn't write that  
> code but I'd bet it was to make the code easy (all waveforms use a lookup  
> table).  
>

>  
> Ron W5RKN  
>  
> also:  
> rparsons@bga.com  
>  
>  
>

Ron: you are correct: the function generator was done so that all the waveforms were look-up tables -- it made the code easy. You can put in an arbitrary waveform and substitute it for one of the canned waveforms and re-assemble the table, then the whole application. This is a case where a linker might have been useful (but not mandatory).

- Tom, N5EG

```
-----+-----
Tom McDermott | "All opinions expressed
Alcatel Network Systems, Inc. | are my own, and do not
mcdermot@aud.alcatel.com | represent those of Alcatel
[ICC'96 Technical Program Secretary] | Network Systems, Inc."
[June 23-27, 1996, Dallas, Tx.] |
-----+-----
```

---

## 96. New TNC(s)

From: dmedley@indirect.com (David Medley)  
Date: Wed, 27 Sep 1995 14:02:41 -0700  
To: dsp-93@tapr.org  
Message-ID: <199509272102.0AA17766@bob.indirect.com>  
Rendered body type: text/plain

For Greg Jones and Gwyn Reedy (or anyone else at PacComm).  
To me one of the more exasperating things about the operation of the DSP-93 has been the necessity to change the radio port speed switch on the TNC when switching from say A0-16 to K0-23, something I like to do from time to time. In my absentmindedness brought about by advancing years I frequently forget to do this and consequently spend most of the orbit tearing my hair out trying to figure out why no data!!

My question is do either of the new TNCs address this problem or will it still be necessary to reset the TNC radio port speed? Perhaps this could be done under software control?

73 de Dave KI6QE

---

## 97. Re: [DSP-93:1621] New TNC(s)

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Wed, 27 Sep 95 17:17:41 UTC  
To: dsp-93@tapr.org  
Message-ID: <6611@paccomm.com>  
Rendered body type: text/plain

In answer to Dave, KI6QE's question about setting baud rates on the new TNCs for the DSP-93:

The PacComm product has software selectable baud rates on all three ports. Thats the terminal port, the DSP loader port, and the HDLC port.

One should be able to create batch files or command files which set the baud rates appropriately and load the DSP with the proper modem all under unmanned control.

73, Gwyn

```

Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org
+ (813) 874-2980 Fax: + (813) 872-8696 BBS: + (813) 874-3078 (V.34)
```

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

---

## 98. Re: [DSP-93:1621] New TNC(s)

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 27 Sep 1995 21:33:24 +0000  
To: dsp-93@tapr.org  
Message-ID: <199509271731.NAA01017@camel.campbell.edu>  
Rendered body type: text/plain

Hi David,

Both the Paccomm and TAPR TNC boards for the DSP-93 will have baud rates that are selectable by software commands. Good news, eh?

At 16:09 9/27/95 -0500, you wrote:

>For Greg Jones and Gwyn Reedy (or anyone else at PacComm).  
>To me one of the more exasperating things about the operation of the DSP-93  
>has been the necessity to change the radio port speed switch on the TNC when  
>switching from say A0-16 to K0-23, something I like to do from time to time.  
>In my absentmindedness brought about by advancing years I frequently forget  
>to do this and consequently spend most of the orbit tearing my hair out  
>trying to figure out why no data!!  
>  
>My question is do either of the new TNCs address this problem or will it  
>still be necessary to reset the TNC radio port speed? Perhaps this could be  
>done under software control?  
>  
>73 de Dave KI6QE  
>  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 99. Re: [DSP-93:1621] New TNC(s)

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 27 Sep 1995 17:17:38 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199509272217.RAA32189@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Hi Dave -- on the TNC-95 there will be no speed switches. It is also firmware controlled.

Greg

According to David Medley:

>  
> For Greg Jones and Gwyn Reedy (or anyone else at PacComm).  
> To me one of the more exasperating things about the operation of the DSP-93  
> has been the necessity to change the radio port speed switch on the TNC when  
> switching from say A0-16 to K0-23, something I like to do from time to time.  
> In my absentmindedness brought about by advancing years I frequently forget  
> to do this and consequently spend most of the orbit tearing my hair out  
> trying to figure out why no data!!  
>  
> My question is do either of the new TNCs address this problem or will it  
> still be necessary to reset the TNC radio port speed? Perhaps this could be  
> done under software control?  
>  
> 73 de Dave KI6QE  
>  
>  
>  
>

---

## 100. New TNC

From: dmedley@indirect.com (David Medley)  
Date: Wed, 27 Sep 1995 20:33:33 -0700  
To: DSP-93@tapr.org  
Message-ID: <199509280333.UAA03851@bob.indirect.com>  
Rendered body type: text/plain

My thanks to Greg Gwyn and Mark for setting my mind at rest. I can hardly wait to get my hands on one!!!  
73 de Dave KI6QE

---

## 101. Re: [DSP-93:1618] First Impressions

From: alan@kether.intellint.com (Alan M. Friedman)  
Date: Sat, 30 Sep 1995 00:06:39 -0500 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <9509300406.AA00718@intellint.com>



```
> From: jtn@te-cats.COM (John T. Nogatch)
> To: dsp-93@tapr.org
> Subject: [DSP-93:1618] First Impressions
> X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas
> X-Comment: Tucson Amateur Packet Radio DSP-93 Kit SIG
>
> I enjoyed this kit! My compliments to the designers, parts
> procurement, & documentation people.
>
> Here...here! :-)
>
> [material deleted]
>
> The holes for the IC sockets are a little large, allowing
> the sockets considerable play until they're soldered. The
> note about J100 was well timed.
>
> Just wondered which note about J100 you were referencing??
```

```
--
_/ _/ _/ _/ | Alan M. Friedman - WA3MLK
//_____| Intelligent Interfaces, Inc.
 ________| (301)299-6631|(301)983-2211
 ________| alan@kether.intellint.com
```

From: bandy@server.elysian.net (John Bandy)  
Date: Sat, 30 Sep 95 18:06 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0szAyw-00024Kc@server.elysian.net>  
Rendered body type: text/plain

Someone at the ARRL Kansas State Convention ask me if the DSP-93 could be used to convert voice to digital and digital to voice. I did not know the answer. Do you? Obviously, a program needs to be written by an upper class electrical engineering student. What band(s) would this mode be legal on?

OLX 1.53 □ We're making safer cars, why aren't we making safer guns?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 30 Sep 1995 19:29:24 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac938cd757c6@[204.96.0.67]>  
Rendered body type: text/plain

Ron

```
>To: dsp-93@tapr.org
>Subject: Digital Voice on DSP-93
>
>Hello one and all,
>
```

>Someone at the ARRL Kansas State Convention ask me if the DSP-93 could  
>be used to convert voice to digital and digital to voice. I did not  
>know the answer. Do you? Obviously, a program needs to be written by  
>an upper class electrical engineering student. What band(s) would this  
>mode be legal on?

>

>73's

>John WØUT

>---

> □ OLX 1.53 □ We're making safer cars, why aren't we making safer guns?  
>

Ron W5RKN

also:

rparsons@bga.com

---

# October 1995

Original source file: dsp.9510

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/dspsig/mail\\_archive/dsp.9510](http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9510)

## 1. W9GR if WONDERFUL!!!

From: "Bob Smith" <bsmith@msn.com>  
Date: Sun, 1 Oct 95 02:11:43 UT  
To: "dsp-93@tapr.org"@msn.com  
Message-ID: <UPMAIL01.199510010217230331@msn.com>  
Rendered body type: text/plain

been puttering around w/ the W9GR filter. Still trying to get the hang of it but WOW. I sign onto a NAVY Mars net each night with mucho static - can't hardly read the guys at all - this filter cleaned it right up! AND I do not think I even have it optimized fully yet.

I love this thing!

Special  
thanks to the developer - what a piece of work! Very nice interface too.

---

## 2. DSPLOAD

From: "Bob Smith" <bsmith@msn.com>  
Date: Sun, 1 Oct 95 02:15:42 UT  
To: "dsp-93@tapr.org"@msn.com  
Message-ID: <UPMAIL01.199510010217250164@msn.com>  
Rendered body type: text/plain

Can someone help me out - trying to use dspload under windows by associating \*.obj files w/ DSPLOAD. With this setup, all I have to do is click the icon to load the object. PROBLEM is that DSPLOAD expects to not have the .OBJ passed and appends it itself so I get 'can't load XXX.obj.obj' errors.

The  
quik fix would be to compile my own version of DSPLOAD but I have never compiled a c program before - only QB4.5 years ago.

Would like to learn  
this art though - can someone recoomend the appropriate compiler for this type of stuff - I also mess around with JNOS too.

In the ean time if  
someone would be kind enough to comile a DSPLOAD for me that fixes this prob I would be most grateful.

Thanks in advance.

Bob Smith.

n3ftu@amsat.org  
TAPR # 5412.

---

## 3. Re: [DSP-93:1628] Re: Digital Voice on DSP-93

From: fperkins@onramp.net  
Date: Sat, 30 Sep 1995 22:25:09 -0500  
To: dsp-93@tapr.org  
Message-ID: <199510010325.WAA15790@mailhost.onramp.net>  
Rendered body type: text/plain

Ron,

Just don't digitize any naughty words :-).

73 Frank WB5IPM

---

## 4. Re: [DSP-93:1628] Re: Digital Voice on DSP-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 1 Oct 1995 06:45:52 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130501ac942f9c9629@[204.181.160.87]>  
Rendered body type: text/plain

John,

Also take a look at <http://lorien.qualcomm.com:80/people/pkarn/voicedemo/>

Phil Karn has several demos of voice digitization transmission.

Ron

```
>>To: dsp-93@tapr.org
>>Subject: Digital Voice on DSP-93
>>
>>Hello one and all,
>>
>>Someone at the ARRL Kansas State Convention ask me if the DSP-93 could
>>be used to convert voice to digital and digital to voice. I did not
>>know the answer. Do you? Obviously, a program needs to be written by
>>an upper class electrical engineering student. What band(s) would this
>>mode be legal on?
>>
>>73's
>>John W0UT
>>---
>>=9C 0LX 1.53 =9C We're making safer cars, why aren't we making safer guns?
>>
```

Ron W5RKN

also:  
rparsons@bga.com

---

## 5. Re: [DSP-93:1626] Re: First Impressions

From: jtn@te-cats.COM (John T. Nogatch)  
Date: Mon, 2 Oct 1995 07:46:58 -0700  
To: dsp-93@tapr.org  
Message-ID: <9510021446.AA11158@te-cats.COM>  
Rendered body type: text/plain

```
> From dsp-93@tapr.org Fri Sep 29 21:19:08 1995
> Originator: dsp-93@tapr.org
> From: alan@kether.intellint.com (Alan M. Friedman)
> >
> > The holes for the IC sockets are a little large, allowing
> > the sockets considerable play until they're soldered. The
> > note about J100 was well timed.
> >
> >
> Just wondered which note about J100 you were referencing??
>
```

Early on, when the IC sockets are being installed, there is a note,  
"You may want to install J100 now".

I'm glad the note was there because J100 is a tight squeeze between  
2 of the sockets. If all of the pins on the 2 sockets were soldered  
and then you tried to mount J100, you might have to unsolder one or both  
of the sockets. Even with this timely note, J100 was a tight fit.

Which brings up another question: what are the several little headers  
like J100 used for? There were no jumper plugs among the parts.

John T. Nogatch WA6BCW jtn@te-cats.com

---

## 6. Re: [DSP-93:1628] Re: Digital Voice on DSP-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 2 Oct 1995 11:40:05 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac95c65b2658@[204.96.0.135]>  
Rendered body type: text/plain

John,

Also take a look at <http://lorien.qualcomm.com:80/people/pkarn/voicedemo/>

Phil Karn has several demos of voice digitization transmission.

Ron

```
>>To: dsp-93@tapr.org
>>Subject: Digital Voice on DSP-93
>>
>>Hello one and all,
```

>>  
>>Someone at the ARRL Kansas State Convention ask me if the DSP-93 could  
>>be used to convert voice to digital and digital to voice. I did not  
>>know the answer. Do you? Obviously, a program needs to be written by  
>>an upper class electrical engineering student. What band(s) would this  
>>mode be legal on?  
>>  
>>73's  
>>John W0UT  
>>---  
>> =9C OLX 1.53 =9C We're making safer cars, why aren't we making safer guns?  
>>

Ron W5RKN

also:  
rparsons@bga.com

---

## 7. Re: [DSP-93:1633] Re: First Impressions

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 2 Oct 1995 14:32:52 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500ac95edea71fe@[204.181.160.78]>  
Rendered body type: text/plain

John,

>Which brings up another question: what are the several little headers  
>like J100 used for? There were no jumper plugs among the parts.

The default jumper 2-3 is a trace on the back of the PCB. To choose 1-2,  
cut the trace and use a jumper plug.

In J100s case, this sets the low-speed clock  
1-2 10 MHz  
2-3 20 MHz

Similar defaults are used on other jumpers -- see the schematic.

Ron W5RKN

also:  
rparsons@bga.com

---

## 8. Re: [DSP-93:1630] DSPLOAD

From: n7ryw@teleport.com (William Roth)  
Date: Mon, 02 Oct 1995 13:06:52 -0700  
To: dsp-93@tapr.org  
Message-ID: <199510022004.NAA09207@desiree.teleport.com>  
Rendered body type: text/plain

>PROBLEM is that DSPLOAD expects to not have the .OBJ  
>passed and appends it itself so I get 'can't load XXX.obj.obj' errors.

My first impression is to not specify the .obj on the command line, so that  
when it is added by dspload it comes out right. If that doesn't work, and if  
dspload is available in source form, I can probably adapt it to Windows with  
a few changes, but I haven't done DOS for a long time and I don't see a  
great need for it anymore.  
>From Bill, n7ryw@teleport.com  
Amsat NA Life Member #2109

---

## 9. DSPLOAD source available

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 2 Oct 1995 19:28:53 -0400  
To: dsp-93@tapr.org  
Message-ID: <v01530503ac95c3393c11@[152.38.1.2]>  
Rendered body type: text/plain

The source for dspload.exe is available by anonymous ftp as:

~tapr/dsp93/software/dspload.c

>My first impression is to not specify the .obj on the command line, so that  
>when it is added by dspload it comes out right. If that doesn't work, and if

>dspload is available in source form, I can probably adapt it to Windows with  
>a few changes, but I haven't done DOS for a long time and I don't see a  
>great need for it anymore.  
>>From Bill, n7ryw@teleport.com  
>Amsat NA Life Member #2109

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 10. Re: [DSP-93:1630] DSPLOAD

From: Roy Welch <rdw@crl.com>  
Date: Mon, 2 Oct 1995 13:55:32 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.951002135331.1710B-100000@crl8.crl.com>  
Rendered body type: text/plain

Bob, let windows run a pif file. In the pif file you can show DSPLOAD in the command line and then just show the object file in the parameters line without the .OBJ. Works fine. I do it from within WiSP.

73, Roy

On Mon, 2 Oct 1995, Bob Smith wrote:

> Can someone help me out - trying to use dspload under windows by associating  
> \*.obj files w/ DSPLOAD. With this setup, all I have to do is click the icon  
> to load the object. PROBLEM is that DSPLOAD expects to not have the .OBJ  
> passed and appends it itself so I get 'can't load XXX.obj.obj' errors.  
>  
> The  
> quik fix would be to compile my own version of DSPLOAD but I have never  
> compiled a c program before - only QB4.5 years ago.  
>  
> Would like to learn  
> this art though - can someone recoomend the appropriate compiler for this  
> type of stuff - I also mess around with JNOS too.  
>  
> In the ean time if  
> someone would be kind enough to comile a DSPLOAD for me that fixes this prob  
> I would be most grateful.  
>  
> Thanks in advance.  
>  
> Bob Smith.  
>  
> n3ftu@amsat.org  
> TAPR # 5412.  
>  
>

---

## 11. W9GR filter

From: "ANTONIO FERNANDEZ" <AFERNAND@JANESPC1.SSW.JNJ.COM>  
Date: 03 Oct 1995 10:18:10 GMT  
To: dsp-93@tapr.org  
Message-ID: <JANESPC1.AFERNAND.391823050095276FJANESPC1@SSW.JNJ.COM>  
Rendered body type: text/plain

Hi,

With the help of the list #1 elmer (TNX Ron) a was able to get the W9GR filter from the TAPR server.  
It works great and the interface is superb. Things like that make the DSP-93 unique.  
Thanks to Mike, N4IRR for the fine job done!!!

Toni, ea4le

---

## 12. help

From: matem@unipv.it (dip. Matematica- Rossella)  
Date: Fri, 6 Oct 1995 22:31:15 +0100  
To: dsp-93@tapr.org  
Message-ID: <9510062131.AA19431@unipv.it>  
Rendered body type: text/plain

Hello gang...  
I am enjoining for the W9GR filter, but i will be happy now to work APT.  
I don't know where is locate the prg foe view the apt images.

tnx in advance also for more info about the APT with dsp-93  
73 in3dyg from dolomite mountains

### 13. Re: [DSP-93:1633] Re: First Impressions

```

From: alan@kether.intellint.com (Alan M. Friedman)
Date: Fri, 6 Oct 1995 21:15:53 -0500 (EDT)
To: dsp-93@tapr.org
Message-ID: <9510070115.AA00691@intellint.com>
Rendered body type: text/plain

> From: jtn@te-cats.com (John T. Nogatch)
> To: dsp-93@tapr.org
> Subject: [DSP-93:1633] Re: First Impressions
> X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas
> X-Comment: Tucson Amateur Packet Radio DSP-93 Kit SIG
>
>
> Just wondered which note about J100 you were referencing??
>
>
> Early on, when the IC sockets are being installed, there is a note,
> "You may want to install J100 now".
>
> I'm glad the note was there because J100 is a tight squeeze between
> 2 of the sockets. If all of the pins on the 2 sockets were soldered
> and then you tried to mount J100, you might have to unsolder one or both
> of the sockets. Even with this timely note, J100 was a tight fit.
>
>
> Thanks for the clarifications :)
>
> Which brings up another question: what are the several little headers
> like J100 used for? There were no jumper plugs among the parts.
>

```

Good question!

Alan  
--  
\\ \\ \\ \\ \\ \\ \\ \\ | Alan M. Friedman - WA3MLK  
\\ \\ \\ \\ \\ \\ \\ \\ | Intelligent Interfaces, Inc.  
Artificial Intelligence | (301)299-6631 || (301)983-2211  
Neural Netification | alan@kether.intellint.com  
\\ \\ \\ \\ \\ \\ \\ \\

## 14. apt info

```

From: "Mark L. Hammond" <hammond@camel.campbell.edu>
Date: Sat, 07 Oct 1995 18:17:21 +0000
To: dsp-93@tapr.org
Message-ID: <199510071818.OAA09181@camel.campbell.edu>
Rendered body type: text/plain

Please use anonymous ftp to ftp.tapr.org and look under

~dsp93/software/new_apt.zip for the latest and greatest APT code from Frank

and

~dsp93/util/imdis79g.exe for the program to view the resulting files.

I hope this helps!

At 16:53 10/6/95 -0500, you wrote:
>Hello gang...
>I am enioing for the W9GR filter,but i will be happy now to work APT.
>I don't know where is locate the prg foe view the apt images.
>tnx in advance also for more info about the APT with dsp-93
>73 in3dyg from dolomite mountains
>
>
>

```

Mark L. Hammond [KC4EBR]

### 15. [DSP-93:1640] help

From: bandy@server.elysian.net (John Bandy)  
Date: Sat, 7 Oct 95 16:45 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t1h3t-00023gC@server.elysian.net>  
Rendered body type: text/plain  
To: dsp-93@tapr.org  
Subject: [DSP-93:1640] help

>I don't know where is locate the prg foe view the apt images.  
>73 in3dyg from dolomite mountains

Hello Matem,

Reference: ARRL QST Journal, "ARRL Publications Catalog", September 1995, page 211, Vol. 79, No. 9.

See Weather Satellite Handbook by Ralph Taggart, WB8DQT, 5th edition, copyright 1994, 224 pages, #4483, 20 dollars USA. Companion 3.5 HD PC software is 10 dollars USA, #4653, available from:

American Radio Relay League (ARRL);  
225 Main St;  
Newington, CT  
06111-1494 USA;  
203-594-0200

Payment must be made in US Funds drawn on a US bank.  
Surface mail is 5.50 dollars USA. Call or write for airmail rates.

I am a life member of ARRL.

73's from the Central Plains.  
John W0UT

---

□ OLX 1.53 □ The easy way in the long run is the hardest way.

---

## 16. Re: [DSP-93:1642] apt info

From: griedman@kelowna.awinc.com (Gerhard Riedmann)  
Date: Sat, 7 Oct 95 14:43:54 PDT  
To: dsp-93@tapr.org  
Message-ID: <m0t1h2A-0003ewC@awinc.com>  
Rendered body type: text/plain  
[Empty message body]

---

## 17. Info for ZL2AMD

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Tue, 10 Oct 95 12:40:56 UTC  
To: dsp-93@tapr.org  
Message-ID: <7674@paccomm.com>  
Rendered body type: text/plain

Pardon this private use of a public forum:  
Dave Lamont, ZL2AMD:

I am unable to respond to your messages. My internet box always tells me it is unable to send a message to the address which appears in your message header.

The initial release of the PacComm TNC for the DSP-93 DOES have the IN and OUT commands needed to use the parallel port for station control operations.

Another question you asked but to which I could not reply:  
The baud rates for all ports (terminal, DSP HDLC, and DSP LOAD) are settable with a software command.

Dave - are you on amsat-bb? I just thought of that. I'll try to reach you as ZL2AMD@AMSAT.ORG.

73,  
Gwyn

-----  
Gwyn Reedy, W1BEL      gwyn@paccomm.com      W1BEL@amsat.org

+(813) 874-2980      Fax:+(813) 872-8696      BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

---



## 18. Catalogs/Suppliers

From: "Robert A. WHEELER" <102006.3004@compuserve.com>  
Date: 11 Oct 95 00:54:54 EDT  
To: DSP-93 SIG <DSP-93@tapr.org>  
Message-ID: <951011045454\_102006.3004\_EHT113-1@CompuServe.COM>  
Rendered body type: text/plain

In reading the mail on the DSPSIG i've noticed several references to Newark Electronics and Digi-key (?) . The only thing around here, NE GA, is RadioShack. Would someone Please send me the phone or address of these catalog supply houses. Add any more you think I might need.  
Thanks and 73, Bob WA40PV

---

## 19. Re: [DSP-93:1646] Catalogs/Suppliers

From: Doug Rorem <rorem@mana.eecs.uic.edu>  
Date: Wed, 11 Oct 1995 00:29:30 -0500  
To: dsp-93@tapr.org  
Message-ID: <rorem-9509110529.AA000415773@mana.eecs.uic.edu>  
Rendered body type: text/plain

>In reading the mail on the DSPSIG i've noticed several references to Newark  
>Electronics and Digi-key (?) . The only thing around here, NE GA, is  
>RadioShack. Would someone Please send me the phone or address of these catalog  
>supply houses. Add any more you think I might need.  
>Thanks and 73, Bob WA40PV

Bob,

Newark has several locations in Illinois (I don't know where you live)  
I don't know if they have a nationwide 800 number...DigiKey is a  
catalog outfit located in northern Minnesota.

Newark Electronics  
General Offices  
4801 Ravenswood  
Chicago, IL  
(312)-784-5100

Newark Electronics  
Schaumburg, IL  
(708)-843-0700

Digi-Key Corporation  
701 Brooks Ave. South  
P.O. Box 677  
Thief River Falls, MN 56701-0677  
(800)-344-4539  
(218)-681-6674 [customer service]

--

|                                   |                        |
|-----------------------------------|------------------------|
| Doug Rorem                        |                        |
| University of Illinois at Chicago | (312)-996-5439 [voice] |
| EECS Department RM 1120           | (312)-413-1065 [fax]   |
| 851 S. Morgan Street              | (708)-996-2226 [pager] |
| Chicago, IL 60607-7053            | rorem@uic.edu          |

---

## 20. Re: [DSP-93:1646] Catalogs/Suppliers

From: EARLWC@aol.com  
Date: Wed, 11 Oct 1995 21:21:02 -0400  
To: dsp-93@tapr.org  
Message-ID: <951011212058\_121786393@emout06.mail.aol.com>  
Rendered body type: text/plain

Hi Bob,

Newark lists two locations in Atlanta area

Norcross, 3860 Hollcomb  
Bridge Road, 30092-2797  
Tel # 404 448-1300

Norcross, 5950 Live Oak  
Parkway, 30093-1729  
Tel # 404 448-8500

Also Macon, 2733 Sheraton Dr.,  
31204-1170  
Tel # 912 743-2446

Besides Digi-Key there is Jameco  
in California  
Tel # 1 800 831-4242

Hope this helps,

Earl, W9HAD

---

## 21. Information Request

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 12 Oct 1995 07:18:23 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500aca2b144a5e7@[204.96.0.134]>  
Rendered body type: text/plain

Can someone answer this request. I'll forward the replies via satellite.

Ron

From: DL3DA  
To: W5RKN  
Subject: What should I read?  
Keywords: DSP

-----  
To: W5RKN  
From: DL3DA  
Time: 232506 UTC  
Date: 11OCT95  
Title: What should I read?

Hello Ron,

now I am at a point, where I need some advice. DSP-93 is working well.  
I am able to make the patches to the modems as I want and I understand,  
why you are making an adaptive PTT and how filters work.

What me completely lacks is the knowledge of modem algorithms. The only  
book I have is Oppenheimer: Signals and systems. But I do not understand  
it. Maybe there exists a more practical book, please tell me, if you can  
recommend anything.

73, Karl DL3DA in Goettingen

Ron W5RKN

also:  
rparsons@bga.com

---

## 22. News problem

From: "Jim Lynch" <k4gvo@america.net>  
Date: Sat, 14 Oct 1995 06:50:59 +0000  
To: dsp-93@tapr.org  
Message-ID: <199510141050.KAA07176@america.net>  
Rendered body type: text/plain

I've stopped getting any news as of 10-11 on both my home system and  
my work system. Does anyone know if it is a generic problem or am I  
just really lucky??

Thanks,

Jim.

|             |                   |             |
|-------------|-------------------|-------------|
| Jim Lynch   | Fayetteville, GA  | K4GVO       |
| '86 GL1200I | k4gvo@america.net | 44.36.34.20 |

---

## 23. Re: [DSP-93:1609] PacComm TNC for the TAPR/AMSAT DSP-93

From: RoberArc@InterLink.NET (Robert Archambault m.d.)  
Date: Sat, 14 Oct 1995 15:32:20 -0400  
To: dsp-93@tapr.org  
Message-ID: <9510141932.AA23281@InterLink.NET>  
Rendered body type: text/plain

Hello Gwyn,

Please tell me if I can order a TNC-95. It would be the only TNC I'll be using with my DSP93 since I don't have a TNC with modem disconnect yet. The TNC-95 certainly looks appropriate for the job!

Please tell me how much \$ you need to ship to Canada so that I could send you the right amount.

73, de VE2SXA  
Robert Archambault md.  
356 De Champs,  
Boucherville, Quebec.  
J4B 6N7  
tel.(514)-641-3141

---

## 24. 73 Mag article on DSP-93

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Mon, 16 Oct 1995 10:04:36 -0400  
To: dsp-93@tapr.org  
Message-ID: <v01530502aca7dd97b88a@[152.38.1.2]>  
Rendered body type: text/plain

Very nice article in Nov. 73 Magazine on the DSP-93 by WA5ZIB. (pg. 58)

Too bad the faceplate in the photo is the original beta one (silver)...

Oh, I see the BLACK faceplate in the "kit photo"...

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 25. Re: [DSP-93:1652] 73 Mag article on DSP-93

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 16 Oct 1995 11:02:01 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199510161602.LAA02316@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Well - long story...maybe Robert will tell it.

I forgot to ask Robert when this all came about which faceplate Andy got was. Anyone -- hope it generates sells.

Next DSP-93 kit run will be in the Spring. Start passing the word. Hope to do 100, but will need 60 units on order to do that.

Greg

According to Mark L. Hammond:

>  
> Very nice article in Nov. 73 Magazine on the DSP-93 by WA5ZIB. (pg. 58)  
>  
> Too bad the faceplate in the photo is the original beta one (silver)...  
>  
> Oh, I see the BLACK faceplate in the "kit photo"..  
>  
>  
> -----  
> Mark L. Hammond [KC4EBR]  
> Campbell University  
>  
>  
>

---

## 26. Re: [DSP-93:1646] Catalogs/Suppliers

From: "VON C. DEEKE" <VONDEEKE@delphi.com>  
Date: Tue, 17 Oct 1995 21:10:13 -0400 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <01HWK78ZAYYA9GVQ2G@delphi.com>  
Rendered body type: text/plain

Digi-Key address:

Digi-Key Corp.  
701 Brooks Ave. South  
P. O. Box 677

Thief River Falls, MN 56701-0677  
phone: 800-344-4539

- Von Deeke WB9KDY

---

## 27. [DSP-93:1648] Re: Catalogs/Suppliers

From: Jon Andrews <jandrews@nrcc.com>  
Date: Tue, 17 Oct 1995 13:07:00  
To: dsp-93@tapr.org  
Message-ID: <199510181810.0AA20653@interport.net>  
Rendered body type: text/plain

Hi Bob,

Newark lists two locations in Atlanta area  
Norcross, 3860 Hollcomb  
Bridge Road, 30092-2797  
Tel # 404 448-1300

Norcross, 5950 Live Oak  
Parkway, 30093-1729  
Tel # 404 448-8500

Also Macon, 2733 Sheraton Dr.,  
31204-1170  
Tel # 912 743-2446

Besides Digi-Key there is Jameco  
in California  
Tel # 1 800 831-4242

Hope this helps,

Earl, W9HAD

---

## 28. [DSP-93:1649] Information Request

From: Jon Andrews <jandrews@nrcc.com>  
Date: Tue, 17 Oct 1995 13:07:00  
To: dsp-93@tapr.org  
Message-ID: <199510181810.0AA20663@interport.net>  
Rendered body type: text/plain

Can someone answer this request. I'll forward the replies via satellite.

Ron

From: DL3DA  
To: W5RKN  
Subject: What should I read?  
Keywords: DSP

-----  
To: W5RKN  
From: DL3DA  
Time: 232506 UTC  
Date: 11OCT95  
Title: What should I read?

Hello Ron,

now I am at a point, where I need some advice. DSP-93 is working well.  
I am able to make the patches to the modems as I want and I understand,  
why you are making an adaptive PTT and how filters work.

What me completely lacks is the knowledge of modem algorithms. The only  
book I have is Oppenheimer: Signals and systems. But I do not understand  
it. Maybe there exists a more practical book, please tell me, if you can  
recommend anything.

73, Karl DL3DA in Goettingen

Ron W5RKN

also:  
rparsons@bga.com

---

## 29. [DSP-93:1650] News problem

From: Jon Andrews <jandrews@nrcc.com>  
Date: Tue, 17 Oct 1995 13:07:00  
To: dsp-93@tapr.org  
Message-ID: <199510181810.0AA20724@interport.net>  
Rendered body type: text/plain

I've stopped getting any news as of 10-11 on both my home system and my work system. Does anyone know if it is a generic problem or am I just really lucky??

Thanks,

Jim.

|             |                   |             |
|-------------|-------------------|-------------|
| Jim Lynch   | Fayetteville, GA  | K4GVO       |
| '86 GL1200I | k4gvo@america.net | 44.36.34.20 |

---

## 30. [DSP-93:1651] Re: PacComm TNC for the TAPR/AMSAT DSP-93

From: Jon Andrews <jandrews@nrcc.com>  
Date: Tue, 17 Oct 1995 13:07:00  
To: dsp-93@tapr.org  
Message-ID: <199510181811.0AA20736@interport.net>  
Rendered body type: text/plain

Hello Gwyn,

Please tell me if I can order a TNC-95. It would be the only TNC I'll be using with my DSP93 since I don't have a TNC with modem disconnect yet. The TNC-95 certainly looks appropriate for the job!

Please tell me how much \$ you need to ship to Canada so that I could send you the right amount.

73, de VE2SXA  
Robert Archambault md.  
356 De Champs,  
Boucherville, Quebec.  
J4B 6N7  
tel.(514)-641-3141

---

## 31. [DSP-93:1652] 73 Mag article on DSP-93

From: Jon Andrews <jandrews@nrcc.com>  
Date: Tue, 17 Oct 1995 13:07:00  
To: dsp-93@tapr.org  
Message-ID: <199510181811.0AA20761@interport.net>  
Rendered body type: text/plain

Very nice article in Nov. 73 Magazine on the DSP-93 by WA5ZIB. (pg. 58)

Too bad the faceplate in the photo is the original beta one (silver)...

Oh, I see the BLACK faceplate in the "kit photo"...

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 32. Re: [DSP-93:1658] Re: PacComm TNC for the TAPR/AMSAT DSP-93

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 18 Oct 1995 14:59:48 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199510181959.0AA27632@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Hello Jon.

Name confusion. TAPR is doing the TNC-95 for the DSP-93. The TNC-95 is under alpha test and will be moving to beta-testing as soon as John Koster, W9DDD, feels the project should. We expect to have (with no problems) tnc-95 kits available when the next DSP-93 kits are shipped.

Paccomm has another TNC now (almost) available for sell which will provide TNC functionality for the DSP-93. It is form factor compatible.

Cheers - Greg

According to Jon Andrews:  
>

> Hello Gwyn,  
>  
> Please tell me if I can order a TNC-95. It would be the only TNC I'll be  
> using with my DSP93 since I don't have a TNC with modem disconnect yet. The  
> TNC-95 certainly looks appropriate for the job!  
>  
> Please tell me how much \$ you need to ship to Canada so that I could send  
> you the right amount.  
>  
> 73, de VE2SXA  
> Robert Archambault md.  
> 356 De Champs,  
> Boucherville, Quebec.  
> J4B 6N7  
> tel.(514)-641-3141  
>  
>  
>  
>  
>  
>

---

### 33. [DSP-93:1660] Re: PacComm

From: bandy@server.elysian.net (John Bandy)  
Date: Wed, 18 Oct 95 18:37 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t5i30-00025KC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: [DSP-93:1660] Re: PacComm

G>Hello Jon.

G>Name confusion. TAPR is doing the TNC-95 for the DSP-93. The TNC-95 is  
>under alpha test and will be moving to beta-testing as soon as John Koster,  
>W9DDD, feels the project should. We expect to have (with no problems)  
>tnc-95 kits available when the next DSP-93 kits are shipped.

G>Paccomm has another TNC now (almost) available for sell which will provide  
>TNC functionality for the DSP-93. It is form factor compatible.

G>Cheers - Greg

Hello Greg,

My Christmas present last year was the DSP-93. I am planning on asking  
Santa for a TAPR TNC-95 for this Christmas. Is there any hope he will  
have one in the bag?

As I understand it the PacComm TNC will be a fully assembled and tested  
TNC board whereas the TAPR TNC-95 will be fully disassembled and  
untested, in other words a 'fun' kit. Either will fit inside the TAPR  
DSP-93 box.

73's  
John W0UT

---

□ OLX 1.53 □ Patience is a virtue.

---

### 34. Re: [DSP-93:1655] Re: Catalogs/Suppliers

From: Enrique.Sanchis@uv.es (Enrique Sanchis)  
Date: Thu, 19 Oct 95 09:33:06 +0100  
To: dsp-93@tapr.org  
Message-ID: <199510190833.DAA17651@sys1.tapr.org>  
Rendered body type: text/plain

>Hi Bob,  
>  
>Newark lists two locations in Atlanta area  
> Norcross, 3860 Hollcomb  
> Bridge Road, 30092-2797  
> Tel # 404 448-1300  
>  
> Norcross, 5950 Live Oak  
> Parkway, 30093-1729  
> Tel # 404 448-8500  
>

>Also Macon, 2733 Sheraton Dr.,  
> 31204-1170  
> Tel # 912 743-2446  
>  
>Besides Digi-Key there is Jameco  
> in California  
> Tel # 1 800 831-4242  
>  
>Hope this helps,  
>  
>Earl, W9HAD  
>  
>  
>  
>  
> Please STOP sending messages to my email  
  
Thanks  
>

---

### 35. Re: [DSP-93:1662] Re: Catalogs/Suppliers

From: enrique.sanchis@uv.es (Enrique Sanchis)  
Date: Thu, 19 Oct 95 14:35:58 +0100  
To: dsp-93@tapr.org  
Message-ID: <199510191336.IAA25986@sys1.tapr.org>  
Rendered body type: text/plain

>>Hi Bob,  
>>  
>>Newark lists two locations in Atlanta area  
>> Norcross, 3860 Hollcomb  
>> Bridge Road, 30092-2797  
>> Tel # 404 448-1300  
>>  
>> Norcross, 5950 Live Oak  
>> Parkway, 30093-1729  
>> Tel # 404 448-8500  
>>  
>>Also Macon, 2733 Sheraton Dr.,  
>> 31204-1170  
>> Tel # 912 743-2446  
>>  
>>Besides Digi-Key there is Jameco  
>> in California  
>> Tel # 1 800 831-4242  
>>  
>>Hope this helps,  
>>  
>>Earl, W9HAD  
>>  
>>  
>>  
>>  
>> Please STOP sending messages to my email  
>  
I have been asked from Mr. GAVILA to reach you, but I have  
nothing to do with your DSP-93 group. Please remove me from your list.  
  
> Thanks  
>>  
>  
>  
>

---

### 36. D93WE WINDOWS DEVELOPMENT

From: bandy@server.elysian.net (John Bandy)  
Date: Thu, 19 Oct 95 18:57 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t64qF-000251C@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: D93WE WINDOWS DEVELOPMENT ENVIRON..

GE OM,

Well, I finally found a used 386 sx 25 Packard Bell motherboard and

installed it in the 286 Packard Bell so I could run D93WE. Man was I surprised. It fit perfectly, even the screw holes lined up. Had to do absolutely NO modification.

Anyone have a slightly worn 386 co-processor chip I could buy?

I converted the CONVO.LST program (Difference Equation, figure 2.7) on page 35 of the book, "Digital Signal Processing with the TMS320C25" by Rulph Chassaing and Darrell W. Horning, John Wiley & Sons. I edited, assembled and downloaded it with D93WE. DSP-93 number 2 (red) light came on and stayed on. This program is suppose to have some data memory (DM) input. How do I put these values in DM with the D93WE? How do I read the output from this program with the D93WE? If this is not possible, are there any work arounds or low cost alternatives.

How is the D93WE instruments used in the development process? What is the definition of the various port modes on the Oscilloscope and Spectrum Analyzer?

73's  
John W0UT

---

□ OLX 1.53 □ I used up all my sick days, so I'm calling in dead.

---

### 37. Re: [DSP-93:1664] D93WE WINDOWS DEVELOPMENT

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)  
Date: Fri, 20 Oct 95 07:36:05 CDT  
To: dsp-93@tapr.org  
Message-ID: <9510201236.AA06604@eagle.aud.alcatel.com>  
Rendered body type: text/plain

> From dsp-93@tapr.org Thu Oct 19 19:02:11 1995  
> Reply-To: dsp-93@tapr.org  
> Originator: dsp-93@tapr.org  
> Sender: dsp-93@tapr.org  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:1664] D93WE WINDOWS DEVELOPMENT  
> X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas  
> X-Comment: Tucson Amateur Packet Radio DSP-93 Kit SIG  
> Content-Length: 1281  
> X-Lines: 31  
>  
> To: dsp-93@tapr.org  
> Subject: D93WE WINDOWS DEVELOPMENT ENVIRON..  
>  
> GE OM,  
>  
> Well, I finally found a used 386 sx 25 Packard Bell motherboard and  
> installed it in the 286 Packard Bell so I could run D93WE. Man was I  
> surprised. It fit perfectly, even the screw holes lined up. Had to do  
> absolutely NO modification.  
>  
> Anyone have a slightly worn 386 co-processor chip I could buy?  
>  
> I converted the CONVO.LST program (Difference Equation, figure 2.7) on  
> page 35 of the book, "Digital Signal Processing with the TMS320C25" by  
> Rulph Chassaing and Darrell W. Horning, John Wiley & Sons. I edited,  
> assembled and downloaded it with D93WE. DSP-93 number 2 (red) light  
> came on and stayed on. This program is suppose to have some data memory  
> (DM) input. How do I put these values in DM with the D93WE? How do I  
> read the output from this program with the D93WE? If this is not  
> possible, are there any work arounds or low cost alternatives.  
>  
> How is the D93WE instruments used in the development process? What is  
> the definition of the various port modes on the Oscilloscope and  
> Spectrum Analyzer?  
>  
> 73's  
> John W0UT

John: I cannot help you much here. You must write DSP-93 assembly code to send and receive whatever you want. Then you must write a windows application that knows how to interface with whatever it is you wrote in DSP-93 assembler. D93WE only helps you edit, assemble, and download an application, and provides a dumb-terminal interface, which helps in debugging.  
It does not help you develop the Windows application.



If you take an already-written TMS320 assembly program, then you will have to modify it to understand the hardware setup of the DSP-93, and then also modify it to communicate over the serial interface to the PC.

The D93WE instruments are not used in the development process. The definition of the various port modes is contained in the header files distributed as part of the assembler code. I forget the name of them, but they all came with the disk, and include the assembler equates defining the ports, gains settings, interrupts, etc.

At this point, you must learn to program both the DSP-93, and to write windows applications.

- Tom, N5EG

```
-----+-----
Tom McDermott | "All opinions expressed
Alcatel Network Systems, Inc. | are my own, and do not
mcdermot@aud.alcatel.com | represent those of Alcatel
[ICC'96 Technical Program Secretary] | Network Systems, Inc."
[June 23-27, 1996, Dallas, Tx.] |
-----+-----
```

### 38. [DSP-93:1665] Re: D93WE W

From: bandy@server.elysian.net (John Bandy)  
Date: Sat, 21 Oct 95 10:18 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t6fgn-00023hC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: [DSP-93:1665] Re: D93WE W

>application, and provides a dumb-terminal interface, which helps in  
>debugging.

Hello Tom, N5EG,

Can I assume a dsp-93 program starts as soon as its downloaded with the D93WE? If this program abends then will a reason message appear in the D93WE window? Is this the debugging help?

M>If you take an already-written TMS320 assembly program, then you will have to  
>modify it to understand the hardware setup of the DSP-93, and then also modif  
>it to communicate over the serial interface to the PC.

How do I do this? Can I assume it 'understand the hardware setup of the DSP-93' if it assembles error free using the TASM? Can you provide a sample of the 'serial interface' code or point out the lines in an existing DSP-93 assembler program I have? Is there a simple DOS program I can download or write in 'C' or BASIC for the PC side? Do you have the specs or know where I can get them.

M> The D93WE instruments are not used in the development process.

So if I want to 'scope the audio on my DSP-93 connect between my radio and PC running PKT931, I need to borrow another PC and DSP-93 to make a 'scope, correct? Where do I plug in the test leads on the DSP-93.

M> At this point, you must learn to program both the DSP-93, and  
>to write windows applications.

I know how to write assembler programs for the IBM 370 architecture and I know how to use my windows editor (generator). Where do I go from here?

73's  
John W0UT

```
M>-----+-----
> Tom McDermott | "All opinions expressed
> Alcatel Network Systems, Inc. | are my own, and do not
> mcdermot@aud.alcatel.com | represent those of Alcatel
> [ICC'96 Technical Program Secretary] | Network Systems, Inc."
-----+-----
```

```
> [June 23-27, 1996, Dallas, Tx.] |
>-----+-----

OLX 1.53 OLX We're making childproof bottles, why not childproof guns?
```

### 39. [DSP-93:1665] Re: D93WE W

From: bandy@server.elysian.net (John Bandy)  
Date: Sat, 21 Oct 95 10:18 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t6fgm-00023aC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: [DSP-93:1665] Re: D93WE W

>application, and provides a dumb-terminal interface, which helps in  
>debugging.

Hello Tom, N5EG,

Can I assume a dsp-93 program starts as soon as its downloaded with the  
D93WE? If this program abends then will a reason message appear in the  
D93WE window? Is this the debugging help?

M>If you take an already-written TMS320 assembly program, then you will have to  
>modify it to understand the hardware setup of the DSP-93, and then also modif  
>it to communicate over the serial interface to the PC.

How do I do this? Can I assume it 'understand the hardware setup of the  
DSP-93' if it assembles error free using the TASM? Can you provide a  
sample of the 'serial interface' code or point out the lines in an  
existing DSP-93 assembler program I have? Is there a simple DOS program  
I can download or write in 'C' or BASIC for the PC side? Do you have  
the specs or know where I can get them.

M> The D93WE instruments are not used in the development process.

So if I want to 'scope the audio on my DSP-93 connect between my  
radio and PC running PKT931, I need to borrow another PC and DSP-93  
to make a 'scope, correct?

M> At this point, you must learn to program both the DSP-93, and  
>to write windows applications.

I know how to write assembler programs for the IBM 370 architecture and  
I know how to use my windows editor (generator). Where do I go from  
here?

73's  
John W0UT

```
M>-----+-----
> Tom McDermott | "All opinions expressed
> Alcatel Network Systems, Inc. | are my own, and do not
> mcdermot@aud.alcatel.com | represent those of Alcatel
> [ICC'96 Technical Program Secretary] | Network Systems, Inc."
> [June 23-27, 1996, Dallas, Tx.] |
>-----+-----

OLX 1.53 OLX We're making childproof bottles, why not childproof guns?
```

### 40. Re: [DSP-93:1667] Re: D93WE W

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 21 Oct 1995 11:33:08 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130501acaed0cf6ba7@[204.251.33.10]>  
Rendered body type: text/plain

John,

>  
>I know how to write assembler programs for the IBM 370 architecture and  
>I know how to use my windows editor (generator). Where do I go from  
>here?  
>  
>73's  
>John W0UT

Have you read and understood the DSP-93 Programmer's Guide? Also understood the vast amount of sample code distributed with the DSP-93?

These are the starting places.

Ron W5RKN

also:  
rparsons@bga.com

---

#### 41. RE: [DSP-93:1667] Re: D93WE W

From: Ron Curry <recurry@insighttec.com>  
Date: Sat, 21 Oct 1995 22:04:40 -0700  
To: "dsp-93@tapr.org" <dsp-93@tapr.org>  
Message-ID: <01BAA001.38F98CC0@yankee.insighttec.com>  
Rendered body type: text/plain

John,

This is one of those "if you have to ask". Here is what you need to do:

1. Get a copy of the TI c2x DSP Users Manual and read it.
2. Read the documentation for the DSP-93. The I/O is documented there.
3. FTP some of the DSP-93 source code from TAPR and study it.
4. Take one of the existing DSP-93 source codes, assemble it and run it. If you can't do this you'll never get your own software working.
5. Once you have done all the above and have a good understanding of how to program the TI DSP and the DSP-93 I/O then you can modify your software debug it, and run it on the DSP-93.

Writing assembler for a DSP is like building a house - except that you start by going to the forest yourself and cutting logs. In other words, nothing is done for you. You have to do all the basic I/O, configure the hardware, etc. yourself. You have to study the manuals to learn how to do this. You have to study example code. It's all relatively straightforward if you've ever programmed microcontrollers or written drivers in assembler before but it's not like writing code for an operating system that has system calls to do all the I/O. The DSP-93 may have some routines in ROM you can call. If it does they will be documented in the manuals.

It sounds as though this is not your background so you've got a lot of reading and experimentation to do. That's how most of us learn this stuff. There is no magic formula.

Cheers,  
Ron Curry KE6WED

-----  
From: John Bandy[SMTP:bandy@server.elysian.net]  
Sent: Saturday, October 21, 1995 8:26 AM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1667] Re: D93WE W

To: dsp-93@tapr.org  
Subject: [DSP-93:1665] Re: D93WE W

>application, and provides a dumb-terminal interface, which helps in  
>debugging.

Hello Tom, N5EG,

Can I assume a dsp-93 program starts as soon as its downloaded with the D93WE? If this program abends then will a reason message appear in the D93WE window? Is this the debugging help?

M>If you take an already-written TMS320 assembly program, then you will have to  
>modify it to understand the hardware setup of the DSP-93, and then also modif  
>it to communicate over the serial interface to the PC.

How do I do this? Can I assume it 'understand the hardware setup of the DSP-93' if it assembles error free using the TASM? Can you provide a sample of the 'serial interface' code or point out the lines in an existing DSP-93 assembler program I have? Is there a simple DOS program I can download or write in 'C' or BASIC for the PC side? Do you have the specs or know where I can get them.

M> The D93WE instruments are not used in the development process.

So if I want to 'scope the audio on my DSP-93 connect between my radio and PC running PKT931, I need to borrow another PC and DSP-93

to make a 'scope, correct?

M> At this point, you must learn to program both the DSP-93, and  
>to write windows applications.

I know how to write assembler programs for the IBM 370 architecture and  
I know how to use my windows editor (generator). Where do I go from  
here?

73's  
John W0UT

```
M>-----+-----
> Tom McDermott | "All opinions expressed
> Alcatel Network Systems, Inc. | are my own, and do not
> mcdermot@aud.alcatel.com | represent those of Alcatel
> [ICC'96 Technical Program Secretary] | Network Systems, Inc."
> [June 23-27, 1996, Dallas, Tx.] |
>-----+-----

```

p 0LX 1.53 p We're making childproof bottles, why not childproof guns?

---

## 42. D93WE WINDOWS DEVELOPMENT

From: john.bandy@twsubbs.twsu.edu (JOHN BANDY)  
Date: Sun, 22 Oct 95 14:19:00 -0600  
To: dsp-93@tapr.org  
Message-ID: <8B3835B.019A02171A.uuout@twsubbs.twsu.edu>  
Rendered body type: text/plain

W>John,

W>>

>>I know how to write assembler programs for the IBM 370 architecture and  
>>I know how to use my windows editor (generator). Where do I go from  
>>here?  
>>  
>>73's  
>>John W0UT

W>Have you read and understood the DSP-93 Programmer's Guide? Also understood  
>the vast amount of sample code distributed with the DSP-93?

W>These are the starting places.

W>Ron W5RKN

Hello Ron and TOM N5EG,

I have already read and studied the following articles/pamphlets and  
they DO NOT work for me because I have not got any previous industrial  
experience/education at programming any DSP microprocessor.

1. "PKT.ASM", DSP-93 diskette.
2. "DSP-93 WORKSHOP" w/diskette, TAPR ANNUAL MEETING, ST. LOUIS, MO,  
3-95
3. "Introduction to Programming the TAPR/AMSAT DSP-93", 14th ARRL  
Digital Communications Conference Proceedings, 9-95
4. "Programming Guide for the DSP-93", ftp.tapr.org tapr/dsp93/manuals
5. "DSP-93 Programming Hits", Same as 3.

Something that has been working for me is studying the first two chapter  
of the book:

"Digital Signal Processing with the TMS320C25" by Rulph  
Chassaing and Darrell W. Horning, Copyright 1990 by John Wiley & Sons,  
Inc.,.

Here is a quote from it: "The background assumed is an electrical  
engineering systems course and a knowledge of assembly language  
programming. ....This text is intended primarily for  
senior and first-year graduate students in electrical and computer

engineering and as a tutorial for the practicing engineer.". This book is NOT a comfortable study for me since I have no experience/education in engineering electronics software. I hold a liberal arts degree in mathematics and a master of computer science degree. My work experience has been in business data processing programming mostly IBM 7080 Autocoder, IBM CICS Cobol, a little assembler, a little Fortran.

This book is teaching me how to program the TMS320C25. I am now at the point I need a Texas Instrument's TMS320C25 Software Development System (SWDS) or equivalent so I can do the labs at the end of each chapter. Can the DSP-93 SWDS be used for these labs or can it be modified so I can do the labs? I don't want to buy another SWDS unless I have to. Would you or Tom N5EG, be so kind to look at this book and let me know.

73's  
John W0UT

---  
□ OLX 1.53 □ We're making safer cars, why aren't we making safer guns?

---  
□ OLX 1.53 □ Behind a great person are many great common people

-----  
The Wichita State University BBS (316)-689-3779 Wichita Ks ,USENET:  
Execnet:Fringenet:Internet:Ilink:Intelec:MLPnet:P&Bnet:Smartnet:U'NI-net  
-----

---

### 43. Re: [DSP-93:1670] D93WE WINDOWS DEVELOPMENT

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 22 Oct 1995 16:27:20 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500acb067666f31@[204.96.0.47]>  
Rendered body type: text/plain

John,

>"Digital Signal Processing with the TMS320C25" by Rulph  
>Chassaing and Darrell W. Horning, Copyright 1990 by John Wiley & Sons,  
>Inc.,.  
[SNIP]  
> Would you or Tom N5EG, be so kind to look at this book and  
>let me know.

Sorry, I don't have the book.

Ron W5RKN

also:  
rparsons@bga.com

---

### 44. [DSP-93:1671] Re: D93WE W

From: bandy@server.elysian.net (John Bandy)  
Date: Sun, 22 Oct 95 18:01 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t790G-00023aC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: [DSP-93:1671] Re: D93WE W

W>John,

W>>"Digital Signal Processing with the TMS320C25" by Rulph  
>>Chassaing and Darrell W. Horning, Copyright 1990 by John Wiley & Sons,  
>>Inc.,.  
>[SNIP]  
>> Would you or Tom N5EG, be so kind to look at this book and  
>>let me know.

W>Sorry, I don't have the book.

W>Ron W5RKN  
Hello Ron,

Its probably in TU's library.

73's

John W0UT

---

□ OLX 1.53 □ From the Air Capital of the World, AKA Aircraft Detroit

---

#### 45. Re: [DSP-93:1670] D93WE WINDOWS DEVELOPMENT

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 22 Oct 1995 19:37:23 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500acb091b01769@[204.96.0.39]>  
Rendered body type: text/plain

John,

>I have already read and studied the following articles/pamphlets and  
>they DO NOT work for me because I have not got any previous industrial  
>experience/education at programming any DSP microprocessor.  
>

I'd suggest something different than using a book unrelated to the DSP-93.  
Start with something simpler. Grab the following:

"TESTLEDS.ASM", DSP-93 diskette.

"Programming Guide for the DSP-93", ftp.tapr.org tapr/dsp93/manuals

Go through the .ASM file and understand each step. Then modify the program  
to light the lamps in the opposite order. Then modify it again to use the  
lights to count in binary. Then modify again to read a digit from the  
keyboard and light the lamps in the binary of that digit. Then add sound  
generation to play the note from the scale corresponding to the digits 1-8.

In other words, start from something simple and known. Modify, modify,  
modify... each time adding a new concept. If you get stuck, post a  
question.

Jump in and sink or swim.

Ron W5RKN

also:  
rparsons@bga.com

---

#### 46. Re: [DSP-93:1671] Re: D93WE WINDOWS DEVELOPMENT

From: alan@kether.intellint.com (Alan M. Friedman)  
Date: Sun, 22 Oct 1995 21:14:32 -0500 (EDT)  
To: dsp-93@tapr.org  
Message-ID: <9510230114.AA03076@intellint.com>  
Rendered body type: text/plain

> From dsp-93@tapr.org Sun Oct 22 18:07 EDT 1995  
> Received: from sys1.tapr.org by intellint.com (5.64/A/UX-3.00)  
> id AA02724; Sun, 22 Oct 95 18:07:11 EDT  
> Received: from sys1.tapr.org (localhost [127.0.0.1]) by sys1.tapr.org (8.6.12/8.6.9) with SMTP id  
QAA06883; Sun, 22 Oct 1995 16:29:14 -0500  
> Date: Sun, 22 Oct 1995 16:29:14 -0500  
> Message-Id: <v02130500acb067666f31@[204.96.0.47]>  
> Reply-To: dsp-93@tapr.org  
> Originator: dsp-93@tapr.org  
> Sender: dsp-93@tapr.org  
> Precedence: bulk  
> From: w5rkn@amsat.org (Ronald G. Parsons)  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:1671] Re: D93WE WINDOWS DEVELOPMENT  
> X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas  
> X-Comment: Tucson Amateur Packet Radio DSP-93 Kit SIG  
> Content-Type: text/plain; charset="us-ascii"  
>  
> John,  
>  
> >"Digital Signal Processing with the TMS320C25" by Rulph  
> >Chassaing and Darrell W. Horning, Copyright 1990 by John Wiley & Sons,  
> >Inc.,.  
> [SNIP]  
> > Would you or Tom N5EG, be so kind to look at this book and  
> >let me know.



>>here?  
>>  
>>73's  
>>John W0UT

W>Have you read and understood the DSP-93 Programmer's Guide? Also understood  
>the vast amount of sample code distributed with the DSP-93?

W>These are the starting places.

W>Ron W5RKN

Hello Ron and TOM N5EG,

I have already read and studied the following articles/pamphlets and they DO NOT work for me because I have not got any previous industrial experience/education at programming any DSP microprocessor.

1. "PKT.ASM", DSP-93 diskette.
2. "DSP-93 WORKSHOP" w/diskette, TAPR ANNUAL MEETING, ST. LOUIS, MO, 3-95
3. "Introduction to Programming the TAPR/AMSAT DSP-93", 14th ARRL Digital Communications Conference Proceedings, 9-95
4. "Programming Guide for the DSP-93", ftp.tapr.org tapr/dsp93/manuals
5. "DSP-93 Programming Hits", Same as 3.

Something that has been working for me is studying the first two chapter of the book:

"Digital Signal Processing with the TMS320C25" by Rulph Chassaing and Darrell W. Horning, Copyright 1990 by John Wiley & Sons, Inc.,.

Here is a quote from it: "The background assumed is an electrical engineering systems course and a knowledge of assembly language programming. ....This text is intended primarily for senior and first-year graduate students in electrical and computer engineering and as a tutorial for the practicing engineer.". This book is NOT a comfortable study for me since I have no experience/education in engineering electronics software. I hold a liberal arts degree in mathematics and a master of computer science degree. My work experience has been in business data processing programming mostly IBM 7080 Autocoder, IBM CICS Cobol, a little assembler, a little Fortran.

This book is teaching me how to program the TMS320C25. I am now at the point I need a Texas Instrument's TMS320C25 Software Development System (SWDS) or equivalent so I can do the labs at the end of each chapter. Can the DSP-93 SWDS be used for these labs or can it be modified so I can do the labs? I don't want to buy another SWDS unless I have to. Would you or Tom N5EG, be so kind to look at this book and let me know.

73's  
John W0UT

---  
p OLX 1.53 p We're making safer cars, why aren't we making safer guns?

---  
p OLX 1.53 p Behind a great person are many great common people

-----  
The Wichita State University BBS (316)-689-3779 Wichita Ks ,USENET:  
Execnet:Fringenet:Internet:Ilink:Intelec:MLPnet:P&Bnet:Smartnet:U'NI-net  
-----

---

## 49. TI TMS 320C2X kit for sale

From: "Mitch, WA40SR" <fmitch@maf.mobile.al.us>  
Date: Sun, 22 Oct 1995 23:32:27 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SOL.3.91.951022232922.7675A-100000@ns1>



Rendered body type: text/plain

hi...

mitch here in mobile...

i have for sale a TI TMS320C2X DGTL SGNL PROC STARTER'S KIT that i picked up as part of a trade... i would like \$60 for it and i pay the ups conus...

mitch  
wa4osr

\* \* \* The \*FIRST HAM OWNER\* of The Vibroplex Co., Inc. \* \* \*

---

Email: fmitch@maf.mobile.al.us                      Felton "Mitch" Mitchell, WA4OSR  
The Vibroplex Co., Inc.  
11 Midtown Park, E.  
Mobile, AL 36606-4141 USA  
334-478-8873 Vibroplex, 334-342-7259 home, 334-476-0465 FAX

---

---

## 50. Re: [DSP-93:1675] DSP-93 PROGRAM DEVELOPMENT

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 23 Oct 1995 07:16:50 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130502acb136cce24d@[204.251.33.18]>  
Rendered body type: text/plain

>I don't have a DSP-93 yet, I am considering purchasing one on the next run.  
>  
>I am familar with programming the 'C26 and I am familar with DSP.  
>  
>My question:  
>  
>Can you download a program, and then breakpoint it, single step it,  
>inspect memory, etc. on the DSP-93?  
>  
>CUL,  
>  
>Smitty, NA5K  
>  
>Henry Smith (hbs@crl.com)

Close. There is debug code that can be included in your code to print out registers, memory, etc. Read the Programming Guide. Also there is a simulator at

<ftp.std.com/pub/wware/c25sim01.zip>

that works with DSP-93 code.

Ron W5RKN

also:  
[rparsons@bga.com](mailto:rparsons@bga.com)

---

## 51. Re: [DSP-93:1667] Re: D93WE W

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)  
Date: Mon, 23 Oct 95 08:08:12 CDT  
To: dsp-93@tapr.org  
Message-ID: <9510231308.AA06997@eagle.aud.alcatel.com>  
Rendered body type: text/plain

John writes:

> Hello Tom, N5EG,  
>  
> Can I assume a dsp-93 program starts as soon as its downloaded with the  
> D93WE? If this program abends then will a reason message appear in the  
> D93WE window? Is this the debugging help?  
>

John: the DSP-93 will do a jump to 1000h when the download is finished. If the code you placed into the DSP-93 properly starts when a jump to 1000h occurs then, yes, it will start. If your DSP-93 program aborts then D93WE knows nothing about it. You DSP-93 code must handle any DSP-93

abort conditions, and send serial characters to the D93WE program, or else nothing will happen.

```
> M>If you take an already-written TMS320 assembly program, then you will have
to
> >modify it to understand the hardware setup of the DSP-93, and then also
modif
> >it to communicate over the serial interface to the PC.
>
> How do I do this? Can I assume it 'understand the hardware setup of the
> DSP-93' if it assembles error free using the TASM? Can you provide a
> sample of the 'serial interface' code or point out the lines in an
> existing DSP-93 assembler program I have? Is there a simple DOS program
> I can download or write in 'C' or BASIC for the PC side? Do you have
> the specs or know where I can get them.
```

The only suggestion that I can make is for you to read all of the literature that came with the DSP-93, and that is posted on the ftp site.

```
>
> M> The D93WE instruments are not used in the development process.
>
> So if I want to 'scope the audio on my DSP-93 connect between my
> radio and PC running PKT931, I need to borrow another PC and DSP-93
> to make a 'scope, correct?
>
```

This question is unclear. You can use the DSP-93 + D93WE as a stand-alone scope. If you want to have your DSP-93 perform both the scope function and some other application simultaneously, then you are out of luck.

```
> M> At this point, you must learn to program both the DSP-93, and
> >to write windows applications.
>
> I know how to write assembler programs for the IBM 370 architecture and
> I know how to use my windows editor (generator). Where do I go from
> here?
>
```

You need to learn to program the DSP-93. This involves TMS assembly code, the architecture of the TMS320 chip, and perhaps knowledge of DSP algorithms. Additionally, you must learn how the DSP-93 handles analog I/O, serial I/O, etc., and all of the nuances of the DSP-93 unit. Read the literature that came with the DSP-93, get the T.I. data books on the TMS320, and perhaps buy some textbooks on programming the TMS320. If you are interested in DSP algorithms, then the reading list I gave you earlier this year should help.

As for the PC side of things, you can use D93WE as a dumb terminal, and then all of your learning can be limited to just the DSP-93 unit. You will communicate with it using ASCII text -- all of which you must write the code for (one character at a time) in the DSP-93 unit.

```
> 73's
> John W0UT
```

At this point, John, you have quite an adventure ahead of you. But one essence of Ham Radio is studying, learning, doing, and becoming more technically proficient.

- Tom, N5EG

```
-----+-----
Tom McDermott | "All opinions expressed
Alcatel Network Systems, Inc. | are my own, and do not
mcdermot@aud.alcatel.com | represent those of Alcatel
[ICC'96 Technical Program Secretary] | Network Systems, Inc."
[June 23-27, 1996, Dallas, Tx.] |
-----+-----
```

## 52. D93WE Instruments Lead Co

From: bandy@server.elysian.net (John Bandy)  
Date: Tue, 24 Oct 95 11:14 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t7lzt-00023hC@server.elysian.net>  
Rendered body type: text/plain  
To: dsp-93@tapr.org  
Subject: D93WE Instruments Lead Connects

Hello Tom N5EG,

Physically, where does one connect the leads on DSP-93 for the 3 D93WE instruments? If one makes his own leads what plugs and wire would you recommend? Won't the port setting on 2 of the instruments dictate the plug type?

73's  
John W0UT  
---

□ OLX 1.53 □ The easy way in the long run is the hardest way.

---

### 53. PROGRAMING DSP-93 WORKSHO

From: bandy@server.elysian.net (John Bandy)  
Date: Tue, 24 Oct 95 11:14 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t7lzp-00023aC@server.elysian.net>  
Rendered body type: text/plain  
To: dsp-93@tapr.org  
Subject: PROGRAMING DSP-93 WORKSHOP VIDEO

Hello Greg WD5IVD,

Can you tell me what happened to the video of the St. Louis DSP-93 Programming Workshop Bob N5BRG and Tom N5EG presented at Florissant Community College on March 5, 1995. I got sick Sunday morning so I went home early and missed the entire workshop. I received the pamphlet with diskette in the mail. Is the video available?

73's  
John W0UT  
---

□ OLX 1.53 □ One marries by "exchanging" old problems for new ones.

---

### 54. Re: [DSP-93:1680] D93WE Instruments Lead Co

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 24 Oct 1995 12:27:37 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500acb2d1ac6a9e@[204.251.33.13]>  
Rendered body type: text/plain

>To: dsp-93@tapr.org  
>Subject: D93WE Instruments Lead Connects  
>  
>Hello Tom N5EG,  
>  
>Physically, where does one connect the leads on DSP-93 for the 3 D93WE  
>instruments? If one makes his own leads what plugs and wire would you  
>recommend? Won't the port setting on 2 of the instruments dictate the  
>plug type?  
>  
>73's  
>John W0UT  
>----  
> □ OLX 1.53 □ The easy way in the long run is the hardest way.  
>  
>

The Radio Ports 1 and 2 are used by the instruments. For example, tune in a 1200 bps packet station just as you would to use the PKT modem. The switch to the Freq Analyzer and look at the two peaks of signal near 1200 and 2200 Hz.

Both plugs are miniDIN-8. Pins 5 and 8 are the input and output lines. See the back panel of the DSP-93.

Ron W5RKN

also:  
rparsons@bga.com

---

## 55. Re: [DSP-93:1680] D93WE Instruments Lead Co

From: mcdermot@eagle.aud.alcatel.com (Tom Mcdermott)  
Date: Tue, 24 Oct 95 13:12:34 CDT  
To: dsp-93@tapr.org  
Message-ID: <9510241812.AA07428@eagle.aud.alcatel.com>  
Rendered body type: text/plain

> To: dsp-93@tapr.org  
> Subject: D93WE Instruments Lead Connects  
>  
> Hello Tom N5EG,  
>  
> Physically, where does one connect the leads on DSP-93 for the 3 D93WE  
> instruments? If one makes his own leads what plugs and wire would you  
> recommend? Won't the port setting on 2 of the instruments dictate the  
> plug type?  
>  
> 73's  
> John W0UT

John: you can connect to either of the DIN audio connectors.  
The port number that you wish to use is selectable from the instrument.  
The schematic will show which pin is ground, which is the audio output  
from the DSP-93 (used for the Function generator), and which is the  
audio input to the DSP-93 (used for the scope and spectrum analyzer).

- Tom

---

|                                         |                            |
|-----------------------------------------|----------------------------|
| Tom McDermott                           | "All opinions expressed    |
| Alcatel Network Systems, Inc.           | are my own, and do not     |
| mcdermot@aud.alcatel.com                | represent those of Alcatel |
| [ ICC '96 Technical Program Secretary ] | Network Systems, Inc."     |
| [ June 23-27, 1996, Dallas, Tx. ]       |                            |

---

---

## 56. Re: [DSP-93:1681] PROGRAMING DSP-93 WORKSHO

From: Greg Jones <gjones@tenet.edu>  
Date: Tue, 24 Oct 1995 14:52:07 -0500 (CDT)  
To: dsp-93@tapr.org  
Message-ID: <199510241952.OAA08855@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Hi John --

Interesting you should ask this. I am working on the workshop presentations  
right now. With luck both workshops will be available via the Web page in  
RealAudio along ith the overheads presentations.

I'll post here when we get it going.

The quiality of the videos we did are not really good enough to go to the  
trouble to duplicate in VHS. When we tried the other day they didn't look  
very good. Something to work on for next time>

Cheers - Greg

According to John Bandy:

>  
> To: dsp-93@tapr.org  
> Subject: PROGRAMING DSP-93 WORKSHOP VIDEO  
>  
> Hello Greg WD5IVD,  
>  
> Can you tell me what happened to the video of the St. Louis DSP-93  
> Programming Workshop Bob N5BRG and Tom N5EG presented at Florissant  
> Community College on March 5, 1995. I got sick Sunday morning so I went  
> home early and missed the entire workshop. I received the pamphlet with  
> diskette in the mail. Is the video available?  
>  
> 73's  
> John W0UT  
> ---  
> □ OLX 1.53 □ One marries by "exchanging" old problems for new ones.  
>

>  
>

---

## 57. [DSP-93:1673] Re: D93WE W

From: bandy@server.elysian.net (John Bandy)  
Date: Tue, 24 Oct 95 15:03 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t7pZf-00023aC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: [DSP-93:1673] Re: D93WE W

W>I'd suggest something different than using a book unrelated to the DSP-93.  
>Start with something simpler. Grab the following:

W> "TESTLEDS.ASM", DSP-93 diskette.

W> "Programming Guide for the DSP-93", ftp.tapr.org tapr/dsp93/manuals

W>Go through the .ASM file and understand each step. Then modify the program  
>to light the lamps in the opposite order. Then modify it again to use the  
>lights to count in binary. Then modify again to read a digit from the  
>keyboard and light the lamps in the binary of that digit. Then add sound  
>generation to play the note from the scale corresponding to the digits 1-8.

Hello Ron,

I have started the above assignment. Thanks.

73's  
John W0UT  
---

□ OLX 1.53 □ Times fun when you're having flies! Kermit the Frog.

---

## 58. Virtual Page

From: Greg Jones <wd5ivd>  
Date: Tue, 24 Oct 1995 17:51:21 -0500 (CDT)  
To: tapr-sys@tapr.org, dsp-93@tapr.org  
Message-ID: <199510242251.RAA02207@sys1.tapr.org>  
Rendered body type: text/plain

Take a look at: <http://www.tapr.org/tapr/html/virtual.html>

We are working up a new page using the RealAudio server. We have limited number of connection -- due to our server interface. But take a look and let me know.

I spent just a few hours taking the audio and making it sound okay -- since neither talk at the annual meeting was miced for audio.

I am redoing two of the DSP-93 segments when I get back in town this weekend.

The PPT files for the DSP-93 presentation can be found in the dsp93 ftp area. The PPT files for Phil's talk are located on his web page. I'll have links to them available as the page beoces closer to going on-line.

Cheers - Greg

---

## 59. Re: [DSP-93:1665] Re: D93WE WINDOWS DEVELOPMENT

From: Carol Byers <crlbyers@garlic.com>  
Date: Thu, 26 Oct 1995 13:35:47 -0700 (PDT)  
To: dsp-93@tapr.org  
Cc: dsp-93@tapr.org  
Message-ID: <Pine.A32.3.91.951026133421.5460C-100000@garlic.com>  
Rendered body type: text/plain

The next step is to setup a few workshops so we can learn how to write some applications?

---

## 60. Documentation Formats

From: bandy@server.elysian.net (John Bandy)  
Date: Thu, 26 Oct 95 21:18 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t8eNn-00023eC@server.elysian.net>

Rendered body type: text/plain  
To: dsp-93@tapr.org  
Subject: Documentation Formats

Hello Ron W5RKN,

Could you convert the following files to .PCX and upload them into ftp so I can download & look at them with my Windows 3.1 Paintbrush software.

analog\_b.gif  
digital\_.gif

Also I have been reading progguid.wor with my Windows 3.1 Write software (.wri) which is not the best but I tried to import it into PC Microsoft Word and PC Microsoft Word Perfect on the downtown library's AST PC and got .....CANNOT CONVERT FORMAT..... or words to that effect. Any ideas?

Thanks & 73's  
John W0UT

---  
□ OLX 1.53 □ Plan your hobby and hobby your plan.

---

## 61. DSP-93 DOCUMENTATION BIND

From: bandy@server.elysian.net (John Bandy)  
Date: Thu, 26 Oct 95 21:19 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t8eNp-00023oC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: DSP-93 DOCUMENTATION BINDING

Hello Greg WD5IVD,

In the next shipment of DSP-93's I think the customers would appreciate the following documents thermo-bounded together with a nice cover. It might also encourage programming if the 'Programming Guide' was included. The order is important. Hi!

1. Operations Manual
2. Developers Guide
3. Programming Guide
4. Function Charts
5. Schematics
6. Assembly Manual

73's  
John W0UT

---  
□ OLX 1.53 □ The easy way in the long run is the hardest way.

---

## 62. Re: [DSP-93:1687] Re: D93WE WINDOWS DEVELOPMENT

From: dave <daveb@buffnet.net>  
Date: Thu, 26 Oct 1995 21:53:14 -0400  
To: dsp-93@tapr.org  
Message-ID: <9510262254.aa16200@buffnet1.buffnet.net>  
Rendered body type: text/plain

>The next step is to setup a few workshops so we can learn how to write  
>some applications?

>  
>

This is a wonderful idea. Lets get started ..

daveb

---

## 63. Printing the Programming Guide.

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@vm.gmd.de>  
Date: Fri, 27 Oct 95 10:09:29 EWT  
To: <dsp-93@TAPR.ORG>  
Message-ID: <199510270909.EAA09029@sys1.tapr.org>  
Rendered body type: text/plain

John W0UT wrote:

Also I have been reading progguid.wor with my Windows 3.1 Write software

(.wri) which is not the best but I tried to import it into PC Microsoft Word and PC Microsoft Word Perfect on the downtown library's AST PC and got .....CANNOT CONVERT FORMAT..... or words to that effect. Any ideas?

I had similar problems that were discussed in July. See my final note copied below. In summary: FTP in binary mode. Use Word 6.0. If you have European paper size, reformat the document.

Regards  
Boris DJ0EX SM0GJ

End of Message  
\*\*\* Forwarding note from BSMEDES --ESOC 95-07-14 12:57 \*\*\*  
To: DSP93 --EXTERNAL

From: Smeds, Boris  
Subject: Printing the Programming Guide.  
Finally I have a readable paper copy of the Programming Guide.

I used PC-NFS FTP program to transfer the file progguid.word in binary mode from  
ftp.tapr.org/tapr/dsp93/manuals

The file is then readable in WORD 6.0 on the screen. Printing on DIN A4 size paper on a HP Laserjet 4 (Postscript) now fails due to paper size incompatibility.

After reformatting the document to A4 size pages, it prints up to and including the picture. The rest comes out blank.

The cure is to force a page break after the picture to get the rest of the text.

Hope this information could be helpful to users with A4 size paper.

Boris

End of Message

---

## 64. Re: [DSP-93:1688] Documentation Formats

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 27 Oct 1995 08:28:50 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500acb684dff62c@[204.251.33.88]>  
Rendered body type: text/plain  
>To: dsp-93@tapr.org  
>Subject: Documentation Formats  
>  
>Hello Ron W5RKN,  
>  
>Could you convert the following files to .PCX and upload them into ftp  
>so I can download & look at them with my Windows 3.1 Paintbrush  
>software.  
>  
> analog\_b.gif  
> digital\_.gif  
>  
>Also I have been reading progguid.wor with my Windows 3.1 Write software  
>(.wri) which is not the best but I tried to import it into PC Microsoft  
>Word and PC Microsoft Word Perfect on the downtown library's AST PC and  
>got .....CANNOT CONVERT FORMAT..... or words to that effect. Any  
>ideas?  
>  
>Thanks & 73's  
>John W0UT  
>  
>---  
> □ OLX 1.53 □ Plan your hobby and hobby your plan.  
>  
>

1. Get on ftp and look for a copy of LVIEW. It will display many different file formats including GIF and JPG. I'll convert these two GIFs this time, but you should make the effort to get the appropriate software.

2. If you downloaded the progguid.wor file correctly, your library's Word program should have opened it without problem if the version is 5 or later.

Ron W5RKN

also:  
rparsons@bga.com

---

## 65. Re: [DSP-93:1691] Printing the Programming Guide.

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 27 Oct 1995 08:28:59 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130502acb68dde1296@[204.251.33.88]>  
Rendered body type: text/plain

>I had similar problems that were discussed in July. See my final note  
>copied below. In summary: FTP in binary mode. Use Word 6.0. If you  
>have European paper size, reformat the document.  
>Regards  
>Boris DJ0EX SM0GJ

This should no longer be necessary as the documents were resized at your suggestion.

Ron W5RKN

also:  
rparsons@bga.com

---

## 66. PacComm TNC for DSP-93

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Fri, 27 Oct 95 09:52:50 UTC  
To: dsp-93@tapr.org  
Message-ID: <8751@paccomm.com>  
Rendered body type: text/plain

Nine units were shipped yesterday. Probably 2 more today. 25 more under construction. Sorry for delays and missed deadlines. Feedback welcomed.

\_\_\_\_\_  
Gwyn Reedy, W1BEL      gwyn@paccomm.com      W1BEL@amsat.org

+(813) 874-2980      Fax:+(813) 872-8696      BBS: +(813) 874-3078 (V.34)

PacComm Packet Radio Systems, Inc, 4413 N. Hesperides St, Tampa, FL 33614-7618

---

## 67. Trouble with my new DSP93

From: Jeff Naus <jeff@dvcorp.com>  
Date: Fri, 27 Oct 1995 23:22:31 -0400  
To: dsp-93@tapr.org  
Message-ID: <199510280322.XAA28810@dvcorp.com>  
Rendered body type: text/plain

Howdy all, This is my first time posting up to the list, and I hate to start off on a bad foot, but I've got trouble with my newly finished DSP-93. I followed along the directions and my voltages look good. I get the "\*" prompt and can query the functions with "?". when I run the memory test ( by pressing "t" ) I get  
\*t MEMORY TEST

ERROR LOCATIONS:

Is this good or bad? It comes back real fast with this result so I'm inclined to believe it's bad. I get the exact same result with the test in the high speed setting (program memory). When I run the mem\_test from the eprom, the thing will spit out 1234567 for a while (~40) seconds the come back with "1E:2". And as the thing heats-up things get worse and worse until after a few minutes I won't be able to get "testleds" or anything else to work. I figure it's a bad solder joint somewhere, but there's nothing obvious. So if some kind sole could give me a hint or some more specific test procedures I would appreciate it. ( I ain't got no oscilloscope, but I do have a DVM and a logic probe I weild faily incompetently :).

Jeffrey Naus  
jeff@dvcorp.com



## 68. Re: [DSP-93:1695] Trouble with my new DSP93

From: Roy Welch <rdw@crl.com>  
Date: Fri, 27 Oct 1995 21:26:32 -0700 (PDT)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.951027212600.28838A-100000@crl6.crl.com>  
Rendered body type: text/plain

Sounds good to me! Mine does the same!

73, Roy

---

## 69. Re: [DSP-93:1695] Trouble with my new DSP93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 28 Oct 1995 06:48:04 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130500acb7c88ef886@[204.251.33.88]>  
Rendered body type: text/plain

> Howdy all, This is my first time posting up to the list, and  
>I hate to start off on a bad foot, but I've got trouble with my newly  
>finished DSP-93. I followed along the directions and my voltages look  
>good. I get the "\*" prompt and can query the functions with "?". when  
>I run the memory test ( by pressing "t" ) I get  
>\*t MEMORY TEST  
>  
>ERROR LOCATIONS:  
>  
>  
>Is this good or bad? It comes back real fast with this result so I'm  
>inclined to believe it's bad. I get the exact same result with the test  
>in the high speed setting (program memory). When I run the mem\_test  
>from the eprom, the thing will spit out 1234567 for a while (~40) seconds  
>the come back with "1E:2". And as the thing heats-up things get worse and  
>worse until after a few minutes I won't be able to get "testleds" or anything  
>else to work. I figure it's a bad solder joint somewhere, but there's  
>nothing obvious. So if some kind sole could give me a hint or some more  
>specific test procedures I would appreciate it. ( I ain't got no osciloscope,  
>but I do have a DVM and a logic probe I weild faily incompently :).  
>  
>Jeffrey Naus  
>jeff@dvcorp.com

This is bad.

Check U115 and make sure it's a 74S03 and not a 74ALS03.

Ron W5RKN

also:  
rparsons@bga.com

---

## 70. SSTV on DSP-93

From: "Manuel A. Maseda" <mmaseda@Packet.Net>  
Date: Sat, 28 Oct 1995 08:42:50 -0400  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BAA511.715171E0@clw003.packet.net>  
Rendered body type: text/plain

I was thinking about writing the code required to allow the DSP-93  
to interface with JVFAX for SSTV. Before I start I wanted to make sure that  
no one else has already done this.

Manuel WF1J

---

## 71. Re: [DSP-93:1698] SSTV on DSP-93

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Sat, 28 Oct 1995 13:38:11 +0000  
To: dsp-93@tapr.org  
Message-ID: <199510281344.JAA14187@camel.campbell.edu>  
Rendered body type: text/plain

Hi Manuel

I recall that Mike, N4IRR (author of wingr code for dsp-93) had expressed an  
interest in doing this. I don't know if he started or not. You might want  
to try and email him at: \*\*\*

\*\*\*(Ron, W5RKN - can you fill this in? I can't find his current email address.)

As software librarian, I am not aware of any such software being released or in development. Many have expressed an interest (me included) and it would be an excellent addition to our DSP-93 software library.

>  
>I was thinking about writing the code required to allow the DSP-93  
>to interface with JVFAX for SSTV. Before I start I wanted to make sure that  
>no one else has already done this.  
>  
>  
>Manuel WF1J  
>  
>

Mark L. Hammond [KC4EBR]

---

## 72. Re: [DSP-93:1699] Re: SSTV on DSP-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 28 Oct 1995 14:45:27 -0500  
To: dsp-93@tapr.org  
Message-ID: <v02130501acb838192da0@[204.251.33.20]>  
Rendered body type: text/plain

>Hi Manuel  
>  
>I recall that Mike, N4IRR (author of wingr code for dsp-93) had expressed an  
>interest in doing this. I don't know if he started or not. You might want  
>to try and email him at: \*\*\*  
>  
>\*\*\*(Ron, W5RKN - can you fill this in? I can't find his current email  
>address.)

mzingman@kendall.mdcc.edu (Mike Zingman)

Ron W5RKN

also:  
rparsons@bga.com

---

## 73. [DSP-93:1694] PacComm TNC

From: bandy@server.elysian.net (John Bandy)  
Date: Sat, 28 Oct 95 15:15 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t9Hf3-00023aC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: [DSP-93:1694] PacComm TNC

>From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
>To: dsp-93@tapr.org  
>Subject: [DSP-93:1694] PacComm TNC for DSP-93  
>X-Listprocessor-Version: 6.0 -- ListProcessor by Anastasios Kotsikonas  
>X-Comment: Tucson Amateur Packet Radio DSP-93 Kit SIG

G>Nine units were shipped yesterday. Probably 2 more today. 25 more under  
>construction. Sorry for delays and missed deadlines. Feedback welcomed.

>  
>\_ \_ \_ \_ \_  
>Gwyn Reedy, W1BEL gwyn@paccomm.com W1BEL@amsat.org

Hello Gwyn,

Hurry!!!!!!!!!!!!!!!!!!!!!!!!!!!!!!

73's  
John W0UT  
---  
□ OLX 1.53 □ Patience is a virtue.

---

## 74. Re: [DSP-93:1697] Re: Trouble with my new DSP93

From: Jeff Naus <jeff@dvcorp.com>  
Date: Sat, 28 Oct 1995 16:27:02 -0400  
To: dsp-93@tapr.org  
Message-ID: <199510282027.QAA17727@dvcorp.com>  
Rendered body type: text/plain

Ron,

Thanks for your help, but I double checked U115 and it is a 74S03.  
I've been double checking the voltages at the chips and they all look good  
( exactly 5.00 volts ). Got anyother good ideas? ( I'm not being sarcastic,  
o.k. maybe just a little, But I do hope you got some :).

THX.

Jeff W9QBS

---

## 75. Re: [DSP-93:1702] Re: Trouble with my new DSP93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 28 Oct 1995 15:32:05 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500acb85151393a@[204.181.160.91]>  
Rendered body type: text/plain

>Ron,

>

> Thanks for your help, but I double checked U115 and it is a 74S03.  
>I've been double checking the voltages at the chips and they all look good  
>( exactly 5.00 volts ). Got anyother good ideas? ( I'm not being sarcastic,  
>o.k. maybe just a little, But I do hope you got some :).

>

>THX.

>

>Jeff W9QBS

Well, here's #2.

Are the voltages across the two 0.22 ohm resistors (one on each board)  
approximately the same? Within a factor of two.

#3. Are both heatsinks about the same temp? They will be hot.

Ron W5RKN

also:  
rparsons@bga.com

---

## 76. AZTEC C Compiler Where??

From: "Bob Smith" <bsmith@msn.com>  
Date: Sat, 28 Oct 95 21:44:59 UT  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <UPMAIL01.199510282144540936@msn.com>  
Rendered body type: text/plain

I wish to make a minor change to DSPLOAD so that .OBJ is not appended to  
every parameter (See below). The source says that it was written for AZTEC  
C. Where can I get this. I see the change that needs to be made and I think  
I can do it, I just need to find AZTEC C. Thanks

I wish to do this to take advantage of WIN95 environment. This way all I  
will have to do is drag and drop onto DSPLOAD and file, whether OBJ appended  
or not, and DSPLOAD will execute it - OR associate OBJ files to DSPLOAD and  
similarly double click on them.

Not a big deal, just would like to do it.

Thanks in advance.

---

## 77. [DSP-93:1683] Re: D93WE I

From: bandy@server.elysian.net (John Bandy)  
Date: Sat, 28 Oct 95 18:10 CDT  
To: dsp-93@tapr.org  
Message-ID: <m0t9K0S-00023eC@server.elysian.net>  
Rendered body type: text/plain

To: dsp-93@tapr.org  
Subject: [DSP-93:1683] Re: D93WE I

M>> To: dsp-93@tapr.org  
 >> Subject: D93WE Instruments Lead Connects  
 >>  
 >> Hello Tom N5EG,  
 >>  
 >> Physically, where does one connect the leads on DSP-93 for the 3 D93WE  
 >> instruments? If one makes his own leads what plugs and wire would you  
 >> recommend? Won't the port setting on 2 of the instruments dictate the  
 >> plug type?  
 >>  
 >> 73's  
 >> John W0UT

M> John: you can connect to either of the DIN audio connectors.  
 >The port number that you wish to use is selectable from the instrument.  
 >The schematic will show which pin is ground, which is the audio output  
 >from the DSP-93 (used for the Function generator), and which is the  
 >audio input to the DSP-93 (used for the scope and spectrum analyzer).

M> - Tom

Hello Tom N5EG,

Thanks to you and Ron W5RKN for your replies.

=====Doc on Spectrum Analyzer and Oscilloscope=====

|                                                                                   | DSP-93       | Soft         |
|-----------------------------------------------------------------------------------|--------------|--------------|
| -----Help Quote-----                                                              | +++Labels+++ | ***Button*** |
| "This button selects one of the 8 analog inputs to the DSP-93 connector. They are |              |              |

|                                                                   |            |          |
|-------------------------------------------------------------------|------------|----------|
| Aux 1 (I0201, pin 3)                                              | 3-Aux In   | Aux1     |
| Aux 2 (I0202, pin 3)                                              | 3-Aux In   | Aux2     |
| JP203-12 (extender connector)                                     |            | JP203-12 |
| JP203-14 (extender connector)                                     |            | JP203-14 |
| Loopback 2 (transmit 2 audio loopback)                            | 5-TD Audio | LoopT2   |
| Receiver 1 (I0201, pin 8)                                         | 8-RD Audio | Recv1    |
| Loopback 1 (transmit 1 audio loopback)                            | 5-TD Audio | LoopT1   |
| Receiver 2 (I0202, pin 8)                                         | 8-RD Audio | Recv2    |
| (Note: transmit audio 1 and 2 are derived from the same signal)." | 6-Ground   |          |

As I understand it the lead would hook to pin 6 and one other pin (excluding the JP203) corresponding to the soft button clicked on to get a signal into the scope or analyzer. Correct?

I looked on the schematic (copyright 1994) at pins JP203-12 and JP203-14 and they appear to be open. Correct?

What does "audio loopback" mean, please?

Not a big deal but the Help button labels and the soft button labels are in most cases different. Example: Loopback 1 for LoopT1, etc..

73's  
 John W0UT

---  
 □ OLX 1.53 □ I'm in shape ... round's a shape isn't it?

## 78. Re: [DSP-93:1705] Re: D93WE I

From: w5rkn@amsat.org (Ronald G. Parsons)  
 Date: Sat, 28 Oct 1995 17:47:54 -0600  
 To: dsp-93@tapr.org  
 Message-ID: <v02130501acb86f6449f1@[204.181.160.27]>  
 Rendered body type: text/plain

John,

You should be using the latest documentation. The latest schematics are dated 1995 and have been available for some time of ftp.tapr.org. Obtain them and use the latest.

I sure we are all busy (I know I am) but it would help me (and I believe you also) if you would TRY and see if "Loopback 1" is the same as "LoopT1". A little experimentation would save my time and help educate yourself. And

TRY and see if "one other pin (excluding the JP203) corresponding to the soft button clicked on to get a signal into the scope or analyzer".

In other words, use your ham radio ingenuity to try and see what happens.

Then you could ask "I tried ... and got ..." rather than always asking first..

Look at the schematic and figure out what "audio loopback" means.

When you are stumped, then ask!!!!!!!!!!!!

Ron

```
>Thanks to you and Ron W5RKN for your replies.
>
>=====Doc on Spectrum Analyzer and Oscilloscope=====
> DSP-93 Soft
>-----Help Quote----- +++Labels+++ ***Button***
>"This button selects one of the 8 analog
>inputs to the DSP-93 connector. They are
>
>Aux 1 (IO201, pin 3) 3-Aux In Aux1
>Aux 2 (IO202, pin 3) 3-Aux In Aux2
>JP203-12 (extender connector) JP203-12
>JP203-14 (extender connector) JP203-14
>Loopback 2 (transmit 2 audio loopback) 5-TD Audio LoopT2
>Receiver 1 (IO201, pin 8) 8-RD Audio Recv1
>Loopback 1 (transmit 1 audio loopback) 5-TD Audio LoopT1
>Receiver 2 (IO202, pin 8) 8-RD Audio Recv2
>(Note: transmit audio 1 and 2 are
>derived from the same signal)." 6-Ground
>
>As I understand it the lead would hook to pin 6 and one other pin
>(excluding the JP203) corresponding to the soft button clicked on to
>get a signal into the scope or analyzer. Correct?
>
>I looked on the schematic (copyright 1994) at pins JP203-12 and JP203-14
>and they appear to be open. Correct?
>
>What does "audio loopback" mean, please?
>
>Not a big deal but the Help button labels and the soft button labels are
>in most cases different. Example: Loopback 1 for LoopT1, etc..
>
>73's
>John W0UT
>
>---
> OLX 1.53 I'm in shape ... round's a shape isn't it?
>
```

Ron W5RKN

also:  
rparsons@bga.com

---

## 79. Re: [DSP-93:1588] Any ready build units available ?

From: "Gregory W. Ratcliff" <ratcliff.8@osu.edu>  
Date: Sat, 28 Oct 1995 20:08:20 -0400  
To: dsp-93@tapr.org  
Message-ID: <199510290008.UAA25895@top.magnus.acs.ohio-state.edu>  
Rendered body type: text/plain

At 02:38 PM 9/19/95 -0500, you wrote:

```
>
>>I'm unfortunately not able to do any kit building of any kind myself due to
>>allergy, and I'm looking for a ready built dsp-93 unit ?
>>Have been owner of a dsp-22232 but sold it recently because I would like to
>>have a dsp-modem that I can tinker a little with myself. I'm more of an
>>experimenter than operator and would like to experiment a little with dsp
>>algoritms.
>
>>If anyone should have a ready built unit on the self - not being used,
>>please send me a mail.
>
>>73's Per Floetten LA5NIA. QTH --> Kirkenes, Norway.
>
>>perfl@oslonett.no
>
```

>  
>  
Well not quite. The design is Freds, the layout I tweaked and started making boards. Yes, I'm still doing runs of 75-100. I'm in a batch now that will ship about the 10th. The next run will most likely ship around Jan 1.

Details below.

Thanks,

greg

An individual unaffiliated with MIT has availed himself to job of coordinating fabrication and distribution of the Mini Board printed circuit board.

If you are interested in obtaining a copy or copies of the board, please send e-mail to Gregory Ratcliff at ratcliff.8@osu.edu

You can also send him an order directly. At the time of this writing, the cost is US\$6 per board. Make checks out to The Progressive Solution and mail them to him at 1763 Hess Boulevard, Columbus, Ohio 43212; call him at (614) 487-0695 for more information.

- Fred Martin  
Tue Oct 20 14:31:58 1992

\$66.00 Parts kit of all parts that mount on the PCB, less PCB (see above).

Assembled boards will also continue to be available....

\$82.00 Assembled and Tested with DLM 2.0 downloaded (we need that in to test...of course you could overwrite the dlm)

\$2.00 Freds 45 page document set...only with board order.

Shipping in the USA: \$3.00 per order... regardless of quantity. Delivery is based upon demand. When orders for 30 boards are received, we do a run of 50. At least one batch a month has been the norm.

-Gregory W. Ratcliff

blank pcbs are always in stock.

Gregory W. Ratcliff  
ratcliff.8@osu.edu  
Columbus, Ohio ICBM  
In the Air N1697X  
On the Air NZ8R

---

## 80. Re: [DSP-93:1707] Re: Any ready build units available ?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 28 Oct 1995 18:43:00 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500acb87e42c7fb@[204.181.160.68]>  
Rendered body type: text/plain

>Well not quite. The design is Freds, the layout I tweaked and started  
>making boards. Yes, I'm still doing runs of 75-100. I'm in a batch now  
>that will ship about the 10th. The next run will most likely ship around  
>Jan 1.

Perhaps I missed it, but what boards are you talking about here???

Ron W5RKN

also:  
rparsons@bga.com

---

## 81. Re: [DSP-93:1704] AZTEC C Compiler Where??

From: Bob Stricklin <bstrick@dallas.net>  
Date: Sun, 29 Oct 1995 12:36:07 -0600  
To: dsp-93@tapr.org  
Message-ID: <9510291836.AA20801@dns>  
Rendered body type: text/plain

AZTEC C is the name of a C compiler. If you have another C compiler available you should just change the called functions which are not contained in you library. Do this by going through a compile and link and see what errors you get. For instance the screen calls are unique to AZTEC. I would not expect much change is required.

The AZTEC C compiler is early 80's technology and while I think they have continued to offer upgrades to their compiler I would just work with what you have.

Others have ported DSP load to more current compilers. Check the FTP site to see if anything has been posted. If not then consider posting your work with some notes indicating what it is and why you did it.

Have fun.

At 05:01 PM 10/28/95 -0500, you wrote:

>I wish to make a minor change to DSPLOAD so that .OBJ is not appended to  
>every parameter (See below). The source says that it was written for AZTEC  
>C. Where can I get this. I see the change that needs to be made and I think  
>I can do it, I just need to find AZTEC C. Thanks  
>  
>I wish to do this to take advantage of WIN95 environment. This way all I  
>will have to do is drag and drop onto DSPLOAD and file, whether OBJ appended  
>or not, and DSPLOAD will execute it - OR associate OBJ files to DSPLOAD and  
>similarly double click on them.  
>  
>Not a big deal, just would like to do it.  
>  
>Thanks in advance.  
>  
>

Bob Stricklin, N5BRG

---

## 82. Re: [DSP-93:1699] Re: SSTV on DSP-93

From: mzingman@kendall.mdcc.edu (Mike Zingman)  
Date: Sun, 29 Oct 1995 21:54:43 -0500  
To: dsp-93@tapr.org  
Message-ID: <199510300254.VAA01971@kendall.mdcc.edu>  
Rendered body type: text/plain

Manuel,

I have done some work on this code. If you want we can work togther on an implementation. I have several ideas on how to implement it. Just have been very busy the last several months. I have just moved and in fact, I have just unpacked the DSP-93. All is well and good with the unit, so I think I can get a little play time in. Only problem is that the HF antenna is not up yet. Probably will go for a dipole or a g5rv.

Mike

PS: The JVFAX interface provides MUCH more than the SSTV mode. Quite a few fax modes are supported. Also, depending on the implementation, a simple interface can be made to allow for the use of the DSP-93 with all of the simple PC hardware interfaces (IE rectify audio, sent it to serial port, software zero cross).

>Hi Manuel

>

>I recall that Mike, N4IRR (author of wingr code for dsp-93) had expressed an  
>interest in doing this. I don't know if he started or not. You might want  
>to try and email him at: \*\*\*

>

>\*\*\* (Ron, W5RKN - can you fill this in? I can't find his current email  
address.)

>

>As software librarian, I am not aware of any such software being released or  
>in development. Many have expressed an interest (me included) and it would  
>be an excellent addition to our DSP-93 software library.

>

>  
>>  
>>I was thinking about writing the code required to allow the DSP-93  
>>to interface with JVFAX for SSTV. Before I start I wanted to make sure that  
>>no one else has already done this.  
>>  
>>  
>>Manuel WF1J  
>  
>>  
>  
>  
>Mark L. Hammond [KC4EBR]  
>  
>

---

### 83. RE: [DSP-93:1710] Re: SSTV on DSP-93

From: "Manuel A. Maseda" <mmaseda@Packet.Net>  
Date: Sun, 29 Oct 1995 22:43:46 -0500  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BAA650.04FB9120@clw005.packet.net>  
Rendered body type: text/plain

Good deal on the JVFAX Mike. I'll be out of town for the next 2 weeks but when I get back I'll get with you and see if we can coordinate our efforts.

Manuel WF1J

---

### 84. Re: [DSP-93:1704] AZTEC C Compiler Where??

From: "Jim Lynch" <k4gvo@america.net>  
Date: Mon, 30 Oct 1995 06:30:06 +0000  
To: "Bob Smith" <bsmith@msn.com>, dsp-93@tapr.org  
Message-ID: <199510301041.KAA20315@america.net>  
Rendered body type: text/plain

> Date: Sat, 28 Oct 1995 17:01:19 -0500  
> Reply-to: dsp-93@tapr.org  
> From: "Bob Smith" <bsmith@msn.com>  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:1704] AZTEC C Compiler Where??

> I wish to make a minor change to DSPLOAD so that .OBJ is not appended to  
> every parameter (See below). The source says that it was written for AZTEC  
> C. Where can I get this. I see the change that needs to be made and I think  
> I can do it, I just need to find AZTEC C. Thanks  
>

> I wish to do this to take advantage of WIN95 environment. This way all I  
> will have to do is drag and drop onto DSPLOAD and file, whether OBJ appended  
> or not, and DSPLOAD will execute it - OR associate OBJ files to DSPLOAD and  
> similarly double click on them.  
>

> Not a big deal, just would like to do it.  
>

> Thanks in advance.  
>  
>

Bob, I ported this to Linux, so I'm pretty sure I can do what you want. What compiler do you use? I'll see if I can port it for you.

Since I can't program the DSP-93, maybe I can contribute something else.

73,  
Jim.  
Jim Lynch                      Fayetteville, GA              K4GVO  
'86 GL1200I                    k4gvo@america.net            44.36.34.20

---

### 85. Re: [DSP-93:1702] Re: Trouble with my new DSP93

From: mark@y100.com  
Date: Mon, 30 Oct 1995 09:46:48 -0800  
To: dsp-93@tapr.org  
Message-ID: <199510301746.AA09015@relay.interserv.com>  
Rendered body type: text/plain

On Sat, 28 Oct 1995, Jeff Naus <jeff@dvcorp.com> wrote:  
>Ron,  
>



> Thanks for your help, but I double checked U115 and it is a 74S03.  
> I've been double checking the voltages at the chips and they all look good  
> ( exactly 5.00 volts ). Got any other good ideas? ( I'm not being sarcastic,  
> o.k. maybe just a little, But I do hope you got some :).  
>

Jeff (and anyone else having similar problems with the recent DSP-93 shipment):

I recently assembled my DSP-93, shipped in early September and had a similar problem. The monitor ran OK, but whenever I tried to start an application (at higher clock frequency), the thing would lock up and had to be rebooted. Sometimes it would be OK for a few minutes after a cold power-up, but would act strange later.

I replaced the "NTE" 74S03 (U115 chip supplied with the kit) with a National Semiconductor chip of the same type, and it cured the problem. The NTE chip does not provide as much output voltage swing at the high clock frequency as the National, and I think this was the reason for erratic operation. If you can borrow a scope, you may want to check the clock bus and see if you're having the same symptoms. Otherwise, just buy a decent chip for 50 cents and give it a try. I was reading less than 2 volts p-p before making this substitution.

73,  
Mark Humphrey  
N2CHV  
WPLY-FM Philadelphia

---

## 86. new version of Linux dspload released

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Tue, 31 Oct 1995 00:36:48 +0000  
To: dsp-93@tapr.org  
Message-ID: <199510310044.TAA15872@camel.campbell.edu>  
Rendered body type: text/plain

Hi all,

Jim, K4GV0, has just released a new version of his DSPLOAD for Linux. This latest version fixes a comport speed problem with the previous release.

Thanks for the new code Jim! I have moved the new file to:

ftp/tapr/dsp93/software/linux/dspload03a.linux.tar

I wish to thank Jim for following protocol! As a reminder - if you post software to the site, you are asked to send an email message to:  
dsp93ftp@tapr.org  
(which gets forwarded to me, your DSP-93 librarian). This way I can move the file and delete or archive the old version.

Mark L. Hammond [KC4EBR]

---

## 87. Re: [DSP-93:1714] new version of Linux dspload released

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 30 Oct 1995 19:01:49 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199510310101.TAA30051@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Mark -- do we have all of John Melton's DSP-93 Linux intefrace code availble on the ftp site ?

Greg

According to Mark L. Hammond:

>  
> Hi all,  
>  
> Jim, K4GV0, has just released a new version of his DSPLOAD for Linux. This  
> latest version fixes a comport speed problem with the previous release.  
>  
> Thanks for the new code Jim! I have moved the new file to:  
>  
> ftp/tapr/dsp93/software/linux/dspload03a.linux.tar  
>  
> I wish to thank Jim for following protocol! As a reminder - if you post  
> software to the site, you are asked to send an email message to:

> dsp93ftp@tapr.org  
> (which gets forwarded to me, your DSP-93 librarian). This way I can move  
> the file and delete or archive the old version.  
>  
>  
>  
> Mark L. Hammond [KC4EBR]  
>  
>

---

## 88. Re: [DSP-93:1715] Re: new version of Linux dspload released

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Tue, 31 Oct 1995 01:32:46 +0000  
To: dsp-93@tapr.org  
Message-ID: <199510310140.UAA17582@camel.campbell.edu>  
Rendered body type: text/plain

As far as I recall, the file I just posted replaced the only Linux code on the site.

I guess we should let John answer - John, did you ever post the other Linux code?

At 19:06 10/30/95 -0600, you wrote:

>Mark -- do we have all of John Melton's DSP-93 Linux intefrace code availble  
>on the ftp site ?  
>  
>Greg  
>  
>According to Mark L. Hammond:  
>>  
>> Hi all,  
>>  
>> Jim, K4GV0, has just released a new version of his DSLOAD for Linux. This  
>> latest version fixes a comport speed problem with the previous release.  
>>  
>> Thanks for the new code Jim! I have moved the new file to:  
>>  
>> ftp/tapr/dsp93/software/linux/dspload03a.linux.tar  
>>  
>> I wish to thank Jim for following protocol! As a reminder - if you post  
>> software to the site, you are asked to send an email message to:  
>> dsp93ftp@tapr.org  
>> (which gets forwarded to me, your DSP-93 librarian). This way I can move  
>> the file and delete or archive the old version.  
>>  
>>  
>> Mark L. Hammond [KC4EBR]  
>>  
>>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 89. Re: [DSP-93:1716] Re: new version of Linux dspload released

From: Greg Jones <gjones@tenet.edu>  
Date: Mon, 30 Oct 1995 19:45:19 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199510310145.TAA25943@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Yeah -- John showed a complete interface for the DSP-93 (minus scope, osc, etc) at the AMSAT meeting in Orlando.

Very good stuff.

Cheers - Greg

According to Mark L. Hammond:

>  
> As far as I recall, the file I just posted replaced the only Linux code on  
> the site.  
>  
> I guess we should let John answer - John, did you ever post the other Linux

## 90. dsp-93

Name: frank wesley  
E-mail: f@hal-pc.org  
Name: Frank Wesley  
E-Mail: f@hal-pc.org

```
>
>Name: frank wesley
>E-mail: f@hal-pc.org
>Name: Frank Wesley
>E-Mail: f@hal-pc.org
>
>
```

>

Mark L. Hammond [KC4EBR]

---

## 92. Re: [DSP-93:1718] dsp-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 30 Oct 1995 22:12:36 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130502acbb51f08b9e@[204.181.160.91]>  
Rendered body type: text/plain

>i am looking for some one to trouble shoot my dsp-93. i have just assembled  
>it and can not get it to talk to my computer.

>

>Name: frank wesley  
>E-mail: f@hal-pc.org  
>Name: Frank Wesley  
>E-Mail: f@hal-pc.org

Do you have a logic probe? If so, I can give you some signals to look for.

Are you sure you have an appropriate serial connection? RTS asserted by the computer?

What PC software are you using?

Ron W5RKN

also:  
rparsons@bga.com

---

## 93. Re: Trouble with my new DSP93

From: Torfinn Holand <torfinn@spacetec.no>  
Date: Tue, 31 Oct 1995 10:50:11 +0100  
To: dsp-93@tapr.org  
Message-ID: <9510310930.AA08312@jupiter.spacetec.no>  
Rendered body type: text/plain

At 11:54 30.10.95 -0600, you wrote:

>Jeff (and anyone else having similar problems with the recent DSP-93 shipment):

>

>I recently assembled my DSP-93, shipped in early September and had a similar  
>problem. The monitor ran OK, but whenever I tried to start an application (at  
>higher clock frequency), the thing would lock up and had to be rebooted.  
>Sometimes it would be OK for a few minutes after a cold power-up, but would  
act

>strange later.

>

>I replaced the "NTE" 74S03 (U115 chip supplied with the kit) with a National  
>Semiconductor chip of the same type, and it cured the problem. The NTE chip  
>does not provide as much output voltage swing at the high clock frequency  
as the  
>National, and I think this was the reason for erratic operation. If you can  
>borrow a scope, you may want to check the clock bus and see if you're having  
>the same symptoms. Otherwise, just buy a decent chip for 50 cents and give  
it a

>try. I was reading less than 2 volts p-p before making this  
>substitution.

>

>73,  
>Mark Humphrey  
>N2CHV  
>WPLY-FM Philadelphia  
>

I had exactly the same symptoms myself, but in my case it was a replacement  
NTE 74S03 received from TAPR that solved the problem. A Texas Instrument  
74S03 did not work. My DSP-93 have been working flawlessly for two months now.

Torfinn Holand, LA7SP  
Tromsøe, Norway

---

## 94. Re: [DSP-93:1714] new version of Linux dsplod released

From: "Jim Lynch" <k4gvo@america.net>  
Date: Tue, 31 Oct 1995 06:29:12 +0000  
To: dsp-93@tapr.org  
Message-ID: <199510311040.KAA07744@america.net>  
Rendered body type: text/plain

> Date: Mon, 30 Oct 1995 18:47:35 -0600  
> Reply-to: dsp-93@tapr.org  
> From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:1714] new version of Linux dspload released

> Hi all,  
>  
> Jim, K4GV0, has just released a new version of his DSPLOAD for Linux. This  
> latest version fixes a comport speed problem with the previous release.  
>  
> Thanks for the new code Jim! I have moved the new file to:  
>  
> ftp/tapr/dsp93/software/linux/dspload03a.linux.tar  
>  
> I wish to thank Jim for following protocol! As a reminder - if you post  
> software to the site, you are asked to send an email message to:  
> dsp93ftp@tapr.org  
> (which gets forwarded to me, your DSP-93 librarian). This way I can move  
> the file and delete or archive the old version.  
>  
>  
>  
> Mark L. Hammond [KC4EBR]  
>  
>  
Thanks, Mark. It's nice to know I did something right for a change.  
8^)

Just one note. This is NOT my original work. This is Bob's DSPLOAD  
that I ported to Linux.

73,  
Jim.  
Jim Lynch                      Fayetteville, GA              K4GV0  
'86 GL1200I                      k4gvo@america.net              44.36.34.20

---

## 95. Paccomm TNC for DSP-93 rcv'd!

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Tue, 31 Oct 1995 11:38:07 -0500  
To: dsp-93@tapr.org  
Message-ID: <v01530501acbbb910c1f9@[152.38.1.2]>  
Rendered body type: text/plain

Hi Gang,

I have just been handed my internal TNC for the DSP-93 by Paccomm (I had  
ordered UPS blue).

Will install tonite (I hope - it's trick or treat for the kiddies) and keep  
you posted.

Anybody on the list have one installed yet?

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 96. Re: [DSP-93:1723] Paccomm TNC for DSP-93 rcv'd!

From: ssalek@h-e.com  
Date: Tue, 31 Oct 95 09:21:10 PDT  
To: dsp-93@tapr.org  
Message-ID: <000000F5.sm@h-e.com>  
Rendered body type: text/plain

Hi Mark--

I'm still waiting for my PacComm DSP-93 TNC to show up. I think that you were  
No. 1 on the list and I'm No. 11, but I'll post to the group when I get mine  
installed. Good luck!

73, Stan

KD6CVL  
Sonoma, CA

---

>Original message sent on Tue, Oct 31 9:47 AM by hammond@camel.campbell.edu  
(Mark L. >Hammond) :

>To: dsp-93@tapr.org

>[DSP-93:1723] Paccomm TNC for DSP-93 rcv'd!  
>Hi Gang,

>I have just been handed my internal TNC for the DSP-93 by Paccomm (I had  
>ordered UPS blue).

>Will install tonite (I hope - it's trick or treat for the kiddies) and keep  
>you posted.

>Anybody on the list have one installed yet?

---

## 97. Re: [DSP-93:1720] Re: dsp-93

From: frank <f@hal-pc.org>  
Date: Tue, 31 Oct 1995 15:53:22 -0600  
To: w5rkn@amsat.org (Ronald G. Parson)  
Cc: dsp-93@tapr.org  
Message-ID: <199510312047.0AA29831@hal-pc.org>  
Rendered body type: text/plain

At 10:26 PM 10/30/95 -0600, you wrote:  
>>i am looking for some one to trouble shoot my dsp-93. i have just assembled  
>>it and can not get it to talk to my computer.  
>>  
>>Name: frank wesley  
>>E-mail: f@hal-pc.org  
>>  
>  
>Do you have a logic probe? If so, I can give you some signals to look for.  
>  
>Are you sure you have an appropriate serial connection? RTS asserted by the  
>computer?

I have a logic probe. The serial connection is correct. I use ProComm software.  
I use the same cable and software as I use with my TrakBox.

>What PC software are you using?

>  
>  
>  
>  
>

---

## 98. Re: [DSP-93:1725] Re: dsp-93

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Tue, 31 Oct 1995 22:37:19 +0000  
To: dsp-93@tapr.org  
Message-ID: <199510312244.RAA11455@camel.campbell.edu>  
Rendered body type: text/plain

Hi Frank,

Make sure you check the following for Procomm Plus (for Dos, right?)

- 1) ALT-S (go into setup menu)
- 2) select TERMINAL OPTIONS
- 3) check out "B" and make sure that XON/XOFF is set to OFF
- 4) check out "C" and make sure that RTS/CTS is set to OFF

Do that first. If you don't have these set correctly, you can get one and  
only one  
\* appearing when you start the unit each time. These settings are CRITICAL.

Are these the settings you currently have?

>I have a logic probe. The serial connection is correct. I use ProComm software.  
>I use the same cable and software as I use with my TrakBox.  
>>  
>>What PC software are you using?  
>  
>>  
>>  
>>  
>>  
>>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 99. Re: [DSP-93:1726] Re: dsp-93

From: frank wesley <f@hal-pc.org>  
Date: Tue, 31 Oct 1995 18:36:37 -0600  
To: dsp-93@tapr.org, dsp-93@tapr.org  
Message-ID: <199511010036.SAA07161@hal-pc.org>  
Rendered body type: text/plain

At 04:41 PM 10/31/95 -0600, Mark L. Hammond wrote:

>Hi Frank,  
>  
>Make sure you check the following for Procomm Plus (for Dos, right?)  
>  
>1) ALT-5 (go into setup menu)  
>  
>2) select TERMINAL OPTIONS  
>  
>3) check out "B" and make sure that XON/XOFF is set to OFF  
>  
>4) check out "C" and make sure that RTS/CTS is set to OFF  
>  
>Do that first. If you don't have these set correctly, you can get one and  
>only one  
>\* appearing when you start the unit each time. These settings are CRITICAL.  
>  
>Are these the settings you currently have?  
>>  
>Mark L. Hammond [KC4EBR]  
>  
>Yes these are the settings that I have been using. I have a TrakBox and I  
use the same cables and software.  
>  
Name: Frank Wesley  
E-Mail: f@hal-pc.org

---

# November 1995

Original source file: dsp.9511

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/dspsig/mail\\_archive/dsp.9511](http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9511)

## 1. TAPR's NEW Virtual Meeting Page

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 1 Nov 1995 02:54:29 -0600 (CST)  
To: tapr-bb@tapr.org (TAPR-BB mailing), tapr-sys@tapr.org (TAPR SYS),  
regional\_freq@tapr.org (Dan Puckett),  
0003241437@mcimail.com (Bill Pasternak),  
bstrick@Leslie-Francis.tenet.edu (Bob Stricklin N5BRG),  
mcdermot@eagle.aud.alcatel.com (Tom McDermott),  
karn@servo.qualcomm.com (Phil Karn), danp@comp.uark.edu (Dan Puckett),  
tapr-board@tapr.org (TAPR Board), psr@tapr.org (PSR),  
dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199511010854.CAA10311@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

TAPR is proud to announce the creation of a virtual meeting, workshop, and seminar page on the [www.tapr.org](http://www.tapr.org) pages.

On our new pages, TAPR uses the RealAudio system to make presentations available for a few events that many amateurs were not able to attend. TAPR is evaluating the RealAudio system, and its current implementation on the TAPR server is limited. The system only allows 6 concurrent connections, so if you find that an audio channel is busy -- try back at another time.

Please let us know what you think about this -- we really want to hear about your experience with these pages.

Currently, the virtual meeting pages include:

\*\*\* 1995 TAPR Annual Meeting, St Louis, MO.

Couldn't attend the TAPR meeting in March of 1995 ? Well - here is your opportunity to listen in to both the Sunday workshops. The TAPR/AMSAT DSP-93 Workshop by Bob Stricklin, N5BRG, and Tom McDermott, N5EG as well as a seminar on Error Control Coding by Phil Karn, KA9Q are made available. Using the Adobe Acrobat format (pdf) we have provided the overheads and between the audio and the overheads you should be able to get a lot from the workshop you couldn't attend!

\*\*\* Repeater Frequency Coordinators Meeting, Oct 7th, 1995

Hear the entire meeting of the nations repeater frequency coordinators who met with the ARRL and the FCC in St. Charles, Missouri, October 7th, 1995. Hear what was said by Rod Stafford, President of the ARRL and Ralph Haller, N4RH, Deputy Chief of the FCC's Wireless Telecommunications Bureau. Listen in on the eventual discussions, debates, and eventual outcomes. Read what Newsline published regarding the event.

\*\*\* Ham Radio and More Show, August 13th, 1995

Hear the August 13th guest, Greg Jones, WD5IVD, President of TAPR discuss digital issues and what TAPR is doing.

-----  
Tucson Amateur Packet Radio  
8987-309 E Tanque Verde Rd #337 \* Tucson, Az \* 85749-9399 \* 817-383-0000  
-----  
e-mail: [TAPR@TAPR.ORG](mailto:TAPR@TAPR.ORG)      ftp: [ftp.tapr.org](ftp://ftp.tapr.org)      web: <http://www.tapr.org>  
-----

## 2. PacComm TNC received and installed...

From: ssalek@h-e.com  
Date: Wed, 1 Nov 95 10:14:52 PDT  
To: dsp-93@tapr.org  
Message-ID: <000000FC.sm@h-e.com>  
Rendered body type: text/plain



Hello all,

Like Mark, I received my PacComm TNC board for the DSP-93 yesterday by UPS Blue. As Gwyn Reedy has previously described, it is a single PC board that stacks on top of the analog board in the DSP-93. It comes with a 2-page preliminary installation/operating guide, a circuit diagram, 4 board spacers, a general PacComm operating manual with commands, etc., and a general "quick reference" card. The board plugs into the DSP-93 TNC jack (J3) and the 4-pin power jack (J205). A wired DIP header plug is provided to plug into the DSP-93 U21 socket (U21 removed first), to provide a transparent DSP LOAD function through the TNC, but this feature is not supported in the initial EPROM release. KISS mode is not supported in the initial firmware release, either; an upgrade is promised for the near future. The former TNC interface ribbon cable plugs into the TNC board and the DB25 on the back panel becomes the new TNC comm port.

Installation of the board last night (after the trick or treaters were done!) went pretty smoothly. PacComm provides a drilling template to accurately locate holes in the DSP-93 front panel for LEDs to show TNC functions. I ended up punching my left-over silver DSP-93 beta front panel (OK I chickened out!) to try the template and the 5 LEDs (DCD, PTT, STR, CON, and PWR) aligned with no problems. The pins on the power connector were about 1/16" too long, causing the TNC board to buckle when the mounting screws were tightened, so I shortened the pins a little. The provided board spacers worked well. The on/off volume pot was a bit of a tight fit during reassembly, but it fit with adequate clearance.

After installation, I powered up the unit (which defaults to 9600 baud 8N1) and the TNC signed on normally. I changed the comm port baud rate to 19.2 K in firmware, and then set up the call sign and date, etc. I loaded the PKTP1 modem from DSP-93 firmware--then a problem showed up. The TNC seems to keep PTT asserted no matter what I did. There are headers provided on the TNC board to set the DSP-93 PTT polarity programming, but these had no effect on the problem. I ran out of time to troubleshoot the problem until at least tonight, so I don't know if it's my error or not. There are some wire jumpers added to the top of the PacComm board on the TNC interface connector, but a review of the DSP-93 interface instructions indicates that those are probably normal.

In summary, the PacComm TNC board for the DSP-93 is pretty neat, and I look forward to hearing from others with this TNC board to see if my PTT problem is unique or not. I'll post more info after I get time to work on it again.

73, Stan Salek  
KD6CVL  
Sonoma, CA

ssalek@h-e.com

---

### 3. Re: [DSP-93:1729] PacComm TNC received and installed...

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 1 Nov 1995 13:56:22 -0500  
To: dsp-93@tapr.org  
Message-ID: <v01530501acbd2a179ad2@[152.38.1.2]>  
Rendered body type: text/plain

Hi Stan,

This is EXACTLY what I saw! PTT asserted at all times after loading a DSP modem.

We both have beta units, they have a unit from one of the builds (first release I am guessing?). Their's works, ours doesn't.

At least we have the same problem. Together, we can get this figured out. Oh, by the way, I \*was\* able to get the unit to print 1200 AFSK packet (I turned the rig off and then on to disable the PTT on the rig while it was keyed up).

I think we (beta units) have the same problem.

If anyone on the group has good or bad luck, please let us know what build your DSP-93 unit is from (build 1 or build 2).

>

>After installation, I powered up the unit (which defaults to 9600 baud 8N1) and  
>the TNC signed on normally. I changed the comm port baud rate to 19.2 K in  
>firmware, and then set up the call sign and date, etc. I loaded the PKTP1 modem  
>from DSP-93 firmware--then a problem showed up. The TNC seems to keep PTT  
>asserted no matter what I did. There are headers provided on the TNC board to

>set the DSP-93 PTT polarity programming, but these had no effect on the  
>problem.  
>I ran out of time to troubleshoot the problem until at least tonight, so I  
>don't  
>know if its my error or not. There are some wire jumpers added to the top of  
>the PacComm board on the TNC interface connector, but a review of the DSP-93  
>interface instructions indicates that those are probably normal.  
>  
>In summary, the PacComm TNC board for the DSP-93 is pretty neat, and I look  
>forward to hearing from others with this TNC board to see if my PTT problem is  
>unique or not. I'll post more info after I get time to work on it again.  
>  
>73, Stan Salek  
>KD6CVL  
>Sonoma, CA  
>  
>ssalek@h-e.com

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

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#### 4. more on the PacComm TNC for DSP-93

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Wed, 1 Nov 1995 14:20:51 -0500  
To: dsp-93@tapr.org  
Message-ID: <v01530503acbd2f21c8d6@[152.38.1.2]>  
Rendered body type: text/plain

Hello All,

Nice write up by Stan on the TNC board by PacComm. I agree with all of his comments, including the "pins a little too long" story. Well made and easy to install. Keep in mind we have beta units, and your results may vary slightly.

One addition comment definitely worthy of mention. The EPROM that is currently shipping with the unit does NOT have KISS or PASSTHRU modes in it. The documents state that the new eprom will be furnished at no charge when they are available. An email message from Gywnn suggests that the new eproms should be ready in about a month (would make a nice Christmas present!).

The PASSTHRU mode is such that the DSP-93 and the TNC can share one com port. The unit, as it currently is shipping, does not implement this and still requires one com port for the DSP-93, and one com port for the TNC (or a com port switch). No big deal for now.

The lack of KISS mode prevents me from using Wisp to work the digital satellites until the new eprom arrives. This is a dissapointment.

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

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#### 5. Re: [DSP-93:1730] Re: PacComm TNC received and installed...

From: ssalek@h-e.com  
Date: Wed, 1 Nov 95 11:26:48 PDT  
To: dsp-93@tapr.org  
Message-ID: <000000FD.sm@h-e.com>  
Rendered body type: text/plain

>Hi Stan,

>This is EXACTLY what I saw! PTT asserted at all times after loading a DSP  
>modem.

>We both have beta units, they have a unit from one of the builds (first  
>release I am guessing?). Their's works, ours doesn't.

>At least we have the same problem. Together, we can get this figured out.

Good news of a sort, Mark. So I guess we can concentrate on some system problem instead of an installation mistake. I'm really wondering if there is anything significantly different about the production run units. I'd sware that I fully updated my unit to "production equivalent" in accordance with the numerous postings, updates, and revised circuit diagrams, but maybe we missed something. The only place it seems that there could be a difference to cause the problem is

at the radio interface header, J3, on the DSP-93 analog board.

I'll probably get some time to work on it again tonight, unless someone posts the solution before then!

73, Stan  
KD6CVL  
Sonoma, CA

ssalek@h-e.com

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## 6. Re: [DSP-93:1732] Re: PacComm TNC received and installed...

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 1 Nov 1995 15:41:10 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130501acbd98946ff7@[204.251.33.22]>  
Rendered body type: text/plain

>I'm really wondering if there is anything  
>significantly different about the production run units. I'd swear that I fully  
>updated my unit to "production equivalent" in accordance with the numerous  
>postings, updates, and revised circuit diagrams, but maybe we missed  
>something.  
>The only place it seems that there could be a difference to cause the  
>problem is  
>at the radio interface header, J3, on the DSP-93 analog board.

The signal to the DSP-93 modem software to assert PTT comes from the TNC through the DSP-93 TNC connector (between U213 and U214) (What is J3?).

If this line is accessible from the PacComm TNC card, look at the logic level of this line (it is a negative logic line).

I know of no differences in this area between the DSP-93 beta units and the production units.

Ron W5RKN

also:  
rparsons@bga.com

---

## 7. DSSP-93 Programming Guide

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 1 Nov 1995 16:40:19 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500acbda6c0c43c@[204.251.33.69]>  
Rendered body type: text/plain

Some PC users have had problems reading the graphics in the DSP-93 Programming Guide. It is apparently due to a bug in Word for Windows. See the following:

"It seems that the problem is that Word for Windows must be upgraded to 6.0c. Apparently, the other versions of WFW 6.0 can't deal with Mac files that contain graphics. I believe that the upgrade, which the Windoz folks need to do, costs \$10."

Hope this helps.

Ron W5RKN

also:  
rparsons@bga.com

---

## 8. Re: [DSP-93:1733] Re: PacComm TNC received and installed...

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 01 Nov 1995 22:47:28 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511012255.RAA02664@camel.campbell.edu>  
Rendered body type: text/plain

Hi Ron,

J3 is the PacComm TNC modem disconnect header end of the connection (20 pins) that accepts the pins from the DSP-93 TNC connector between U213 and U214. Besides these 20 lines, there really are only 2 more (of a 4 pin

connector = J205), AC voltage from the stack and ground.

We *should* be able to figure this one out.

If I check pins 5,6,9 and 10 (PTT lines all tied together), they are all LOW on my logic probe, regardless of whether I have some modem.obj file loaded in the DSP-93, or not; regardless of whether PTT1 and PTT2 jumpers (lines) are pulled to +5V or grounded.

I am a little confused by the use of the terms "negative logic" below. So, I have read the voltages at these pins (5,6,9,10). They are about 280ma DC always.

So, any suggestions what to check next?

>>The only place it seems that there could be a difference to cause the  
>>problem is  
>>at the radio interface header, J3, on the DSP-93 analog board.  
>  
>The signal to the DSP-93 modem software to assert PTT comes from the TNC  
>through the DSP-93 TNC connector (between U213 and U214) (What is J3?).  
>  
>If this line is accessible from the PacComm TNC card, look at the logic  
>level of this line (it is a negative logic line).  
>

All 20 lines are available as the short, soldered ends of these pins are on the top of the stack :-). See results above.

>I know of no differences in this area between the DSP-93 beta units and the  
>production units.  
>  
>

Interesting.

>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

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## 9. RE: [DSP-93:1734] DSSP-93 Programming Guide

From: "Beaudry, Tom" <Tom\_Beaudry@tvratings.com>  
Date: Wed, 01 Nov 95 17:57:00 PST  
To: dsp-93 <dsp-93@tapr.org>  
Message-ID: <309824FD@mailgate.dun.nielsen.com>  
Rendered body type: text/plain

The upgrade is also available at their FTP site. For those who don't have need for the full program, there's a Word document viewer available also.

73,  
Thomas M. Beaudry K8LA/YS1ZTM  
Tom\_Beaudry@tvratings.com

Alonzo Quijanas was a pessimist!!!

-----  
From: dsp-93[SMTP:dsp-93@tapr.org]  
Sent: Wednesday, November 01, 1995 4:45 PM  
To: dsp-93  
Subject: [DSP-93:1734] DSSP-93 Programming Guide

Some PC users have had problems reading the graphics in the DSP-93 Programming Guide. It is apparently due to a bug in Word for Windows. See the following:

"It seems that the problem is that Word for Windows must be upgraded to 6.0c. Apparently, the other versions of WFW 6.0 can't deal with Mac

files  
that contain graphics. I believe that the upgrade, which the Windoz  
folks  
need to do, costs \$10."

Hope this helps.

Ron W5RKN

also:  
rparsons@bga.com

---

## 10. Re: [DSP-93:1734] DSSP-93 Programming Guide

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 01 Nov 1995 23:13:15 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511012321.SAA03490@camel.campbell.edu>  
Rendered body type: text/plain

FYI, Word for Windows 95 (they call it Word 7.0) seems to work just dandy.  
I can't see anything wrong with the file after looking at each page.

At 16:45 11/1/95 -0600, you wrote:

>Some PC users have had problems reading the graphics in the DSP-93  
>Programming Guide. It is apparently due to a bug in Word for Windows. See  
>the following:  
>  
>"It seems that the problem is that Word for Windows must be upgraded to  
>6.0c. Apparently, the other versions of WFW 6.0 can't deal with Mac files  
>that contain graphics. I believe that the upgrade, which the Windoz folks  
>need to do, costs \$10."  
>  
>Hope this helps.  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 11. Re: [DSP-93:1732] Re: PacComm TNC received and installed...

From: ssalek@h-e.com  
Date: Wed, 1 Nov 95 15:15:42 PDT  
To: dsp-93@tapr.org  
Message-ID: <00000102.sm@h-e.com>  
Rendered body type: text/plain

Hello Ron,

>The signal to the DSP-93 modem software to assert PTT comes from the TNC  
>through the DSP-93 TNC connector (between U213 and U214) (What is J3?).

Sorry, Ron, I think that the J3 designation comes from the PacComm TNC board for  
the connector that plugs into the DSP-93 TNC connector (between U213/U214).

>If this line is accessible from the PacComm TNC card, look at the logic  
>level of this line (it is a negative logic line).

Yes it is easily accessible and I will look at it tonight. Also, I was thinking  
of removing the PacComm board and testing it independently of the DSP-93. From  
all appearances, the PacComm TNC is causing the PTT assertion. I did try the  
CALibrate function in the TNC, but it did not toggle the PTT line at all when I  
used the K command to alternate TX/RX.

>I know of no differences in this area between the DSP-93 beta units and the  
>production units.

Thanks--I didn't think that there were any, either.

73, Stan  
KD6CVL

P.S. Ron--I think that I also sent this message to your personal email address by mistake.

---

## 12. Re: [DSP-93:1732] Re: PacComm TNC received and installed...

From: ssalek@h-e.com  
Date: Wed, 1 Nov 95 15:51:20 PDT  
To: dsp-93@tapr.org  
Message-ID: <00000105.sm@h-e.com>  
Rendered body type: text/plain

Hi Ron,

>If you want one, I'll give you a "hint" to modify the modem.

>Tell me which modem.

I think that the PKTPx modem would be best--with that one you can hear the alternate Bell 202 tones.

73, Stan

---

## 13. Re: [DSP-93:1734] DSSP-93 Programming Guide

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 1 Nov 1995 18:15:07 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199511020015.SAA10393@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

I should have the updated version of the manual for printing in the next run and available in pdf format shortly. Just fell off my full plate.

On another note -- I got the overheads for all the workshops at the St Louis Meeting converted and on the virtual meeting page for those who aksed me about them missing.

Greg

According to Ronald G. Parsons:

>  
> Some PC users have had problems reading the graphics in the DSP-93  
> Programming Guide. It is apparently due to a bug in Word for Windows. See  
> the following:  
>  
> "It seems that the problem is that Word for Windows must be upgraded to  
> 6.0c. Apparently, the other versions of WFW 6.0 can't deal with Mac files  
> that contain graphics. I believe that the upgrade, which the Windoz folks  
> need to do, costs \$10."  
>  
> Hope this helps.  
>  
>  
> Ron W5RKN  
>  
> also:  
> rparsons@bga.com  
>  
>  
>

---

## 14. Re: [DSP-93:1737] Re: DSSP-93 Programming Guide

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 1 Nov 1995 19:56:36 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500acbdd3813cfc@[204.181.160.85]>  
Rendered body type: text/plain

Mark,

You are correct. The problem is in Word for Windows, not Word for Windows 95. Sorry I didn't cover all the bases.

>FYI, Word for Windows 95 (they call it Word 7.0) seems to work just dandy.  
>I can't see anything wrong with the file after looking at each page.  
>

>At 16:45 11/1/95 -0600, you wrote:  
>>Some PC users have had problems reading the graphics in the DSP-93  
>>Programming Guide. It is apparently due to a bug in Word for Windows. See  
>>the following:  
>>  
>>"It seems that the problem is that Word for Windows must be upgraded to  
>>6.0c. Apparently, the other versions of WFW 6.0 can't deal with Mac files  
>>that contain graphics. I believe that the upgrade, which the Windoz folks  
>>need to do, costs \$10."  
>>

Ron W5RKN

also:  
rparsons@bga.com

---

## 15. Success! ->PacComm TNC for DSP-93

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Thu, 02 Nov 1995 04:57:06 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511020505.AAA14264@camel.campbell.edu>  
Rendered body type: text/plain

Hello all,

Here is an update to the installation of the PacComm TNC for the DSP-93. I am making progress, thanks to Ron and Stan.

I have cut the soldered on shorting wires as follows:

5+6 <--- cut the wire that shorts them

9+10 <-- cut the wire that short them

Now, 6 and 10 are still shorted by a small trace on the BOTTOM of the TNC board. Even with all the plastic there, you can just get to the trace and carefully open the trace with the tip of an Exacto knife. Hold the board towards a bright light, and look at bottom of the board. You can make out the trace between J3 pins 6 and 10. \*CAREFULLY cut the trace to open.

Opening these three lines has apparently made my unit fully functional.

If you have the TNC interfaced correctly (and a fully functional DSP-93, by the way!), and can successfully run TESTLEDS, then you have done the mods correctly.

I have been enjoying it on 1200 AFSK.

Now to drill the faceplate! Guess that will have to wait until tomorrow.

Thanks Ron and Stan! (for those who don't know this, Ron doesn't even have a TNC or schematic on hand. He did all of this help over the net with diagnostic tests and results reported by me and Stan).

Mark L. Hammond [KC4EBR]

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## 16. DSP-93 Programming Guide

From: Greg Jones <gjones@tenet.edu>  
Date: Wed, 1 Nov 1995 23:45:12 -0600 (CST)  
To: dsp-93@tapr.org (DSP-93 Build)  
Message-ID: <199511020545.XAA17190@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

Well - after starting, stopping, and then startinug again I finsihed the updates to the programming guide as outlined by Ron and it is now available via:

[ftp://ftp.tapr.org/tapr/dsp93/manuals/DSP-93\\_Prog\\_Guide.pdf](ftp://ftp.tapr.org/tapr/dsp93/manuals/DSP-93_Prog_Guide.pdf)

The link is also present on the web page.

Since I have recently received my upgrade to the pdf distiller the pdf file contains the bookmarks based on the table of contents -- nice feature.

I will be looking at redoing the other manuals as I get time to have this feature present.

I have also simplified the DSP-93 Web page for faster loading. The Picutres are now on a second page that people can go look at if they want. This should help the speed of the page load. I am working on the page now -- so the only missing is the picutre -- so the icon will not show up until I get done. But you can have a look now.

Greg

---

## 17. Re: [DSP-93:1742] Success! ->PacComm TNC for DSP-93

From: ssalek@h-e.com  
Date: Wed, 1 Nov 95 21:38:10 PDT  
To: dsp-93@tapr.org  
Message-ID: <00000106.sm@h-e.com>  
Rendered body type: text/plain

Great news, Mark--

I made the same discoveries a little while ago. I solved the problem a little differently: I removed pins 6, 8 and 9 from the TNC connector on the DSP-93 analog board by heating them from the bottom of the board and extracting them from the top with needlenose pliers. Since receiving the PacComm TNC, I suspected the added straps on connector J3. After studying the DSP-93 and TNC circuit diagrams, I realized that the lines on pins 5, 6, 8, and 9 should not all be shorted together on the DSP-93 TNC header. Removing those pins (except for pin 5) on the DSP-93 side solved the problem; my fix is electrically equivalent to yours.

73 and good work,

Stan  
KD6CVL  
Sonoma, CA

ssalek@h-e.com

---

## 18. Re: [DSP-93:1742] Success! ->PacComm TNC for DSP-93

From: ssalek@h-e.com  
Date: Wed, 1 Nov 95 21:53:01 PDT  
To: dsp-93@tapr.org  
Message-ID: <00000108.sm@h-e.com>  
Rendered body type: text/plain

Oh, one more thing, Mark:

>I have cut the soldered on shorting wires as follows:

>5+6 <--- cut the wire that shorts them

>9+10 <-- cut the wire that short them

>Now, 6 and 10 are still shorted ... Exacto knife. Opening these three lines has apparently >made my unit fully functional.

I think that these lines will still need to be connected together on the TNC board ONLY (not on the DSP-93) in order for the TNC PTT LED to work. The other thing that they do is connect CTS and RTS on the PacComm TNC port (similar to the way it was done on the TNC2). I don't know if that part is necessary for the TNC to work properly, but since yours is working with all of those lines disconnected, probably not.

Anyway, that's why I removed the TNC connector pins on the DSP-93 side of my unit. Let me know if I'm right about the TNC PTT LED.

73, Stan

---

## 19. Correction about my PacComm TNC Fix

From: ssalek@h-e.com  
Date: Wed, 1 Nov 95 22:06:34 PDT  
To: dsp-93@tapr.org  
Message-ID: <00000109.sm@h-e.com>  
Rendered body type: text/plain

Hi Mark and gang:

Actually, I removed pins 6, 9, and 10 from the DSP-93 analog board TNC connector (not 6, 8 and 9 as I previously reported). As Mark correctly stated, the pins tied together on the PacComm TNC are 5,6, 9 and 10.



P.S. -- one thing made more difficult by the addition of the PacComm TNC is you can't get to the DSP-93 level potentiometers any more. Gwyn, the next TNC revision should have holes through the PC board above the locations of the adjustment screws on R213 through R216.

73, Stan

Final message tonight, I promise!

---

## 20. Re: [DSP-93:1745] Re: Success! ->PacComm TNC for DSP-93

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Thu, 02 Nov 1995 11:50:19 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511021158.GAA01960@camel.campbell.edu>  
Rendered body type: text/plain

You are right. I was looking for a PTT LED to blink on the TNC, but could not see one. I thought that was the function of LED2... Cutting the lines did in fact stop the PTT LED from indicating PTT activity.

The interesting thing is that now (at least for the PKTP1 modem) the PTT LED on the TNC seems to act like a "received audio level indicator". Neat, huh?

Good work Stan. I think ultimately your fix is the proper one. Harder to do, but more correct.

>I think that these lines will still need to be connected together on the TNC  
>board ONLY (not on the DSP-93) in order for the TNC PTT LED to work. The other  
>thing that they do is connect CTS and RTS on the PacComm TNC port (similar to  
>the way it was done on the TNC2). I don't know if that part is necessary for  
>the TNC to work properly, but since yours is working with all of those lines  
>disconnected, probably not.

>

>Anyway, that's why I removed the TNC connector pins on the DSP-93 side of my  
>unit. Let me know if I'm right about the TNC PTT LED.

>

>73, Stan

>

>

>

>

Mark L. Hammond [KC4EBR]

---

## 21. Re: [DSP-93:1746] Correction about my PacComm TNC Fix

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 2 Nov 1995 07:04:49 -0600  
To: dsp-93@tapr.org  
Cc: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Message-ID: <v02130501acbe71895dd2@[204.181.160.32]>  
Rendered body type: text/plain

>Hi Mark and gang:

>

>Actually, I removed pins 6, 9, and 10 from the DSP-93 analog board TNC  
>connector

>(not 6, 8 and 9 as I previously reported). As Mark correctly stated, the pins  
>tied together on the PacComm TNC are 5,6, 9 and 10.

>

>P.S. -- one thing made more difficult by the addition of the PacComm TNC is you  
>can't get to the DSP-93 level potentiometers any more. Gwyn, the next TNC  
>revision should have holes through the PC board above the locations of the  
>adjustment screws on R213 through R216.

>

>73, Stan

>

>Final message tonight, I promise!

Good point about the holes on the TNC card to access the pots on the DSP-93.

I thought I mentioned this but it may have been in the TNC-95 discussion group and not to PacComm. In any case, this is pretty critical.

PacComm please note.

Ron W5RKN

also:  
rparsons@bga.com

---

## 22. Re: [DSP-93:1747] Re: Success! ->PacComm TNC for DSP-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 2 Nov 1995 07:10:08 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130502acbe72d7ac48@[204.181.160.32]>  
Rendered body type: text/plain

I assume PacComm will fix this but wouldn't it be easier (on the current card) to cut (or bend) the connecting pins from the bottom of the TNC card so they do not enter the holes on the DSP-93 TNC connector rather than unsoldering pins on the DSP-93 analog card?

They could be insulated by some small heat shrink tubing. I hate to see people mucking with the DSP-93 card.

Ron

>You are right. I was looking for a PTT LED to blink on the TNC, but could  
>not see one. I thought that was the function of LED2... Cutting the lines  
>did in fact stop the PTT LED from indicating PTT activity.  
>  
>The interesting thing is that now (at least for the PKTP1 modem) the PTT LED  
>on the TNC seems to act like a "received audio level indicator". Neat, huh?  
>  
>Good work Stan. I think ultimately your fix is the proper one. Harder to  
>do, but more correct.  
>  
>  
>>I think that these lines will still need to be connected together on the TNC  
>>board ONLY (not on the DSP-93) in order for the TNC PTT LED to work. The  
>>other  
>>thing that they do is connect CTS and RTS on the PacComm TNC port (similar to  
>>the way it was done on the TNC2). I don't know if that part is necessary for  
>>the TNC to work properly, but since yours is working with all of those lines  
>>disconnected, probably not.  
>>  
>>Anyway, that's why I removed the TNC connector pins on the DSP-93 side of my  
>>unit. Let me know if I'm right about the TNC PTT LED.  
>>  
>>73, Stan  
>>  
>>  
>>  
>>  
>  
>  
>Mark L. Hammond [KC4EBR]

Ron W5RKN

also:  
rparsons@bga.com

---

## 23. pins on the TNC board

From: hammond@camel.campbell.edu (Mark L. Hammond)  
Date: Thu, 2 Nov 1995 09:14:34 -0500  
To: dsp-93@tapr.org  
Cc: ssalek@h-e.com (Stan Stalek)  
Message-ID: <v01530502acbe363d8bad@[152.38.1.2]>  
Rendered body type: text/plain

Hi Ron,

The reason we aren't doing anything much with the TNC connector pins is that it is physically challenging to do.

Remember that the connector on the DSP unit is MALE, while the connector on the TNC board is FEMALE. The way that PacComm made a "long female connector" on the TNC board was very clever. Basically, there are long, very well insulated pins that stretch down from the TNC board towards the DSP board, terminating in a 20 pin (2x10 header style) socket. At

PacComm, they could cut the pins (only three I think would do it) before putting the insulating material on. For me and Stan, this will be pretty challenging to do (and others, assuming they find the same results as us. I think that the production DSP units have the same TNC connections as the beta units, right?)

I don't have the schematics at work, but I \*think\* that a combination of pin removal/cutting and shorting wire/removal/trace cutting will be the best compromise for those of us with the problem.

-----  
Mark L. Hammond [KC4EBR]  
Campbell University

---

## 24. Re: [DSP-93:1748] Re: Correction about my PacComm TNC Fix

From: Greg Jones <gjones@tenet.edu>  
Date: Thu, 2 Nov 1995 08:17:21 -0600 (CST)  
To: dsp-93@tapr.org  
Cc: jkoster@tenet.edu (John Koster)  
Message-ID: <199511021417.IAA29971@Leslie-Francis.tenet.edu>  
Rendered body type: text/plain

According to Ronald G. Parsons:

>  
> Good point about the holes on the TNC card to access the pots on the DSP-93.  
>  
> I thought I mentioned this but it may have been in the TNC-95 discussion  
> group and not to PacComm. In any case, this is pretty critical.

Yeah -- John is suppose to have them in the TNC-95.

Greg

---

## 25. Re: [DSP-93:1750] pins on the TNC board

From: ssalek@h-e.com  
Date: Thu, 2 Nov 95 10:39:18 PDT  
To: dsp-93@tapr.org, hammond@camel.campbell.edu (Mark L. Hammond)  
Message-ID: <0000010D.sm@h-e.com>  
Rendered body type: text/plain

HiMark and all,

>The reason we aren't doing anything much with the TNC connector pins is  
>that it is physically challenging to do.

I agree completely with Mark. PacComm needs to just remove J3 socket pins 6, 9, and 10 on futue shipments of the TNC card, and that will fix the problem without requiring DSP-93 surgery. I decided to work on the DSP-93 end because it was more convenient.

>I don't have the schematics at work, but I \*think\* that a combination of  
>pin removal/cutting and shorting wire/removal/trace cutting will be the  
>best compromise for those of us with the problem.

If the pins mentioned above are removed on the DSP-93 analog card, the problem is solved without requiring any cutting/jumping on the TNC card. I haven't tried it, but maybe its not too hard to remove the socket pins from J3 on the PacComm card. The traces are so small on the PacComm card that I decided against a "cut and jump-around" solution.

73, Stan  
KD6CVL

---

## 26. Modifications to first batch of PacComm TNC's for DSP-93

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Thu, 02 Nov 95 14:37:15 UTC  
To: dsp-93@tapr.org  
Message-ID: <9315@paccomm.com>  
Rendered body type: text/plain

I've been reading the mail carefully, and what you guys discovered and corrected overnight has now been run through our design department adn here is what we recommend. Your additional comments are welcome.

1. Remove the shorting wires on the TNC connector J3 between pins 5-6 and 9-10. These are on the component side of the board.

2. Cut the trace between J3 Pins 6 and 10 on the solder side of the TNC.
3. Cut the trace between J3 pin 6 and C40 negative lead on the component side of the board. This isolates the TNC PTT circuit from the header.
4. Place a wire jumper from the netative side of C20 to the feed-through next to the letter "C" in the C8 silkscreen. This enables the PTT LED on the TNC which was disabled in steps 1 & 2.
5. Cut the trace on the component side of the board which goes into the feed-through next to "C" in C\*. This isolates Pin 6 of the header from the TNC.
6. On U5 (MPU) jumper pins 56 and 57 (RTS & CTS) to reconnect the lines cut in step 1 and 2.

That should make the unit nicely compatible with the DSP header. If done, carefully there should be very little visual evidence of the changes.

Finally, holes to adjust the trimpots. We are drilling holes in the TNC at the following locations as measured from the upper left rear corner of the board. {With the board lying on the solder side and the LEDs to the right.} 0.95 x 1.9, 0.95 x 2.3, 1.175 x 1.9, 1.175 x 2.3, all in inches. These holes do NOT damage any traces which are needed for proper operation of the TNC.

If you send a request to us, we will fax you a blow-up of that area of the board with the hole centers marked. Or, for the faint of heart ( make that the sensible) types, send the board in and we will drill the holes for you and give you a new board if we damage the old one, HI.

By the way, the holes are 1/10 inch in diameter.

Any feedback on these modifications is welcomed. The next batch of 25 units will go out with these modifications pre-made unless someone finds a flaw in the plan.

-----  
 Gwyn Reedy, W1BEL                      gwyn@paccomm.com                      W1BEL@amsat.org  
 PacComm Packet Radio Systems, Inc.                      +(813) 874-2980    Fax: +(813) 872-8696  
 4413 N. Hesperides St.                      BBS: +(813) 874-3078 (V.34)  
 Tampa, FL 33614-7618 USA                      info@paccomm.com    http://www.paccomm.com/info

## 27. Typo corrections to my message about the PacComm TNC

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
 Date: Thu, 02 Nov 95 16:48:50 UTC  
 To: dsp-93@tapr.org  
 Message-ID: <9325@paccomm.com>  
 Rendered body type: text/plain

Reference the message just sent with modifications to the TNC for the DSP-93.

In item number 4, change to read, "the negative side of C40" not C20.

In item number 5, change C\* to read C8.

(Gotta get better typist!)

-----  
 Gwyn Reedy, W1BEL                      gwyn@paccomm.com                      W1BEL@amsat.org  
 PacComm Packet Radio Systems, Inc.                      +(813) 874-2980    Fax: +(813) 872-8696  
 4413 N. Hesperides St.                      BBS: +(813) 874-3078 (V.34)  
 Tampa, FL 33614-7618 USA                      info@paccomm.com    http://www.paccomm.com/info

## 28. Re: [DSP-93:1753] Modifications to first batch of PacComm TNC's for DSP-93

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
 Date: Thu, 02 Nov 1995 22:15:21 +0000  
 To: dsp-93@tapr.org  
 Cc: gwyn@paccomm.com  
 Message-ID: <199511022223.RAA22132@camel.campbell.edu>  
 Rendered body type: text/plain

Hi Gwyn. I'm having trouble locating a few of caps you indicated below:

At 15:44 11/2/95 -0600, you wrote:

>I've been reading the mail carefully, and what you guys discovered and  
>corrected overnight has now been run through our design department adn  
>here is what we recommend. Your additional comments are welcome.  
>  
>1. Remove the shorting wires on the TNC connector J3 between pins 5-6  
>and 9-10. These are on the component side of the board.  
>

Okay

>2. Cut the trace between J3 Pins 6 and 10 on the solder side of the TNC.  
>

Okay

>3. Cut the trace between J3 pin 6 and C40 negative lead on the component  
>side of the board. This isolates the TNC PTT circuit from the header.

This is the cap between the silkscreen markings "S1" and "L1", right? There  
is no C40 silkscreen marking visible.

>  
>4. Place a wire jumper from the netative side of C20 to the feed-through  
>next to the letter "C" in the C8 silkscreen. This enables the PTT LED  
>on the TNC which was disabled in steps 1 & 2.

Where is C20 ? (do you maybe mean negative side of C40 ?)

>  
>5. Cut the trace on the component side of the board which goes into the  
>feed-through next to "C" in C\*. This isolates Pin 6 of the header from  
>the TNC.  
>

Where is C\* ? (oh, maybe you mean C8, since a "shift-8" types a \* ?)

>6. On U5 (MPU) jumper pins 56 and 57 (RTS & CTS) to reconnect the lines  
>cut in step 1 and 2.

Ooooo. I don't like that one....soldering on the MPU surface mount pins.

>  
>That should make the unit nicely compatible with the DSP header. If done,  
>carefully there should be very little visual evidence of the changes.  
>  
>Finally, holes to adjust the trim pots. We are drilling holes in the TNC  
>at the following locations as measured from the upper left rear corner  
>of the board. {With the board lying on the solder side and the LEDs  
>to the right.} 0.95 x 1.9, 0.95 x 2.3, 1.175 x 1.9, 1.175 x 2.3, all in  
>inches. These holes do NOT damage any traces which are needed for  
>proper operation of the TNC.  
>  
>If you send a request to us, we will fax you a blow-up of that area of  
>the board with the hole centers marked. Or, for the faint of heart (  
>make that the sensible) types, send the board in and we will drill the  
>holes for you and give you a new board if we damage the old one, HI.  
>

That sounds like a good solution (mailing back in, I mean ;-)

>By the way, the holes are 1/10 inch in diameter.  
>

>Any feedback on these modifications is welcomed. The next batch of 25  
>units will go out with these modifications pre-made unless someone finds  
>a flaw in the plan.  
>

>  
>\_ \_ \_ \_ \_ Reedy, W1BEL \_ \_ \_ \_ \_ gwyn@paccomm.com \_ \_ \_ \_ \_ W1BEL@amsat.org \_ \_ \_ \_ \_  
>  
>PacComm Packet Radio Systems, Inc. + (813) 874-2980 Fax: + (813) 872-8696  
>4413 N. Hesperides St. BBS: + (813) 874-3078 (V.34)  
>Tampa, FL 33614-7618 USA info@paccomm.com http://www.paccomm.com/info  
>  
>  
>

Mark L. Hammond [KC4EBR]

## 29. Re: [DSP-93:1755] Re: Modifications to first batch of PacComm

From: ssalek@h-e.com  
Date: Thu, 2 Nov 95 15:58:14 PDT  
To: dsp-93@tapr.org  
Message-ID: <00000110.sm@h-e.com>  
Rendered body type: text/plain

Hi Mark and Gwyn--

I see you have the "official" mods out. I will probably keep what I have for now (remove pins 6, 9, and 10 from the DSP-93 TNC header), which is electrically equivalent.

Also:

>>Finally, holes to adjust the trimpots. We are drilling holes in the TNC  
>>at the following locations as measured from the upper left rear corner  
>>of the board. {With the board lying on the solder side and the LEDs  
>>to the right.} 0.95 x 1.9, 0.95 x 2.3, 1.175 x 1.9, 1.175 x 2.3, all in  
>>inches. These holes do NOT damage any traces which are needed for  
>>proper operation of the TNC.  
>>  
>>If you send a request to us, we will fax you a blow-up of that area of  
>>the board with the hole centers marked. Or, for the faint of heart (  
>>make that the sensible) types, send the board in and we will drill the  
>>holes for you and give you a new board if we damage the old one, HI.

----->>>GWYN: You can fax me the drawing at 707/996-5280. Just make sure my name (Stan Salek) is on the fax somewhere and it will get to me.

>That sounds like a good solution (mailing back in, I mean ;-)

----->>>MARK: I think that Bob Strickland moved the pots somewhat from from the Beta to the Prod1 layouts (they were too tightly packed together), so these measured locations are probably wrong for our Beta boards! I think that we may be on our own on this one. An overlay of the Prod and Beta board component placement diagrams should answer this question for sure. I'll do that tomorrow when I can bring both diagrams to the photocopier at work. I imagine the TNC-95 folks will have this problem as well.

----->>>GWYN: I still need to do some more experimenting, but I am confused with the selections available under the BAUD command on the PacComm TNC. PORT 1 is the user comm port, and it lets you select higher baud rates including 19.2K (19.2K should be the default, not 9.6K). But the other two ports on the list, RADIO and PORT 2 are limited: RADIO is fixed at 1200 baud and PORT 2 has an upper limit of 9.6K. If one of those two ports is to be used to communicate with the DSP-93, then we are in trouble because the DSP-93 PASSTHRU will need 19.2K. Will that be changed in the firmware upgrade? I don't know how the RADIO port is used--are we stuck at 1200 for something until the firmware upgrade arrives?

73, Stan  
KD6CVL

ssalek@h-e.com

---

## 30. Revision B of Modifications to the first batch of PacComm TNCs for DSP-93

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Fri, 03 Nov 95 07:17:41 UTC  
To: dsp-93@tapr.org  
Message-ID: <9370@paccomm.com>  
Rendered body type: text/plain

Several helpful comments have been received about the information posted yesterday. Here is an update to that information, followed by a complete reload of the whole procedure.

If you don't feel comfortable soldering together the pins 56 and 57 on the mpu (step 6 in original procedure) substitute the following for the original step 6.

New 6. Solder a jumper wire from the feed through following the '4' in C24 silkscreen to the negative side of C40. This shorts RTS and CTS.

If you can't find the 'c' in C8 - it is about 3/4 inch below the positive end of C15, the 2200 uF cap.

Here is the complete thing over again, without the typos (or different ones):

1. Remove the shorting wires on teh TNC connector J3 between pins 5-6 and 9-10. These are on the component side of the board.

2. Cut the trace between J3 pins 6 and 10 on the solder side of the board.
3. Cut the trace between J3 pin 6 and C40 negative lead on the component side of the board. This isolates the TNC PTT circuit from the header. C40 is to the front of the board next to the positive side of C15, the 2200 uF.
4. Place a wire jumper from the negative side of C40 to the feed-through next to the letter 'c' in the c8 silkscreen. This is about half an inch below C15 and C40. This isolates the PTT LED on the TNC which was disabled in steps 1 & 2.
5. Cut the trace on the component side of the board which goes into the feed-through next to the c in c8. This is located about half an inch below the positive end of C15, the 2200 uF cap.
6. Do one of the following:
  - a. Make a solder bridge connecting pins 56 and 57 of U5 (surface mount MPU). Pin 1 is on the southeast corner near the U5 marking. Pins 1-30 are along the edge near the LED side of the board, pins 31-50 are along the top. Pin 51 is the first one on the 'left' or northwest side with pin 80 at the bottom end of that side. (All directions assume board is oriented with LEDs at the right and the 2200 uF capacitor at the top (North)).
  - b. If not a, install a jumper wire from the feed through following the '4' in C24 silkscreen to the negative side of C40.
 Either of these steps shorts RTS to CTS on the HDLC port.

If you call PacComm (800) 486-7388 or send a fax (number below) we will fax you diagrams of these component locations.

Regarding drilling holes for trimpot adjustments - see previous posting.

Our email response is going to be sluggish for a few days - ye email operator is about to leave for the Houston Hamfest and it is not likely that the SIG will be closely watched.

---

Gwyn Reedy, W1BEL                      gwyn@paccomm.com                      W1BEL@amsat.org

PacComm Packet Radio Systems, Inc.                      +(813) 874-2980    Fax: +(813) 872-8696  
 4413 N. Hesperides St.                      BBS: +(813) 874-3078 (V.34)  
 Tampa, FL 33614-7618 USA                      info@paccomm.com    http://www.paccomm.com/info

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### 31. Programming Guide pdf format

From: "Smeds, Boris" <BSMEDS%ESOC.BITNET@vm.gmd.de>  
 Date: Fri, 3 Nov 95 14:08:44 EWT  
 To: <dsp-93@tapr.org>  
 Message-ID: <199511031314.HAA06897@sys1.tapr.org>  
 Rendered body type: text/plain

Greg wrote:

> Well - after starting, stopping, and then startinug again I finsihed the  
 > updates to the programming guide as outlined by Ron and it is now available  
 > via:

> ftp://ftp.tapr.org/tapr/dsp93/manuals/DSP-93\_Prog\_Guide.pdf

When I read the pdf file with Acrobat Exchange 1.0 I get a line overwritten. This is on page 7, right column , H-INTEL LOADER HIGH BITS.

The third (last) line in the "typical lines of a loadable file:" with the hex listing is overwritten.

I have the correct text from the word version. So it is not really a problem. Does anybody else see the same overprinting of this line?

Boris DJ0EX SM0GJ

End of Message

### 32. Re: [DSP-93:1758] Programming Guide pdf format

From: w5rkn@amsat.org (Ronald G. Parsons)  
 Date: Fri, 3 Nov 1995 09:13:20 -0600  
 To: dsp-93@tapr.org  
 Message-ID: <v02130500acbfel68cc90@[204.181.160.30]>  
 Rendered body type: text/plain

> Greg wrote:

>> Well - after starting, stopping, and then startinug again I finsihed the

>>updates to the programming guide as outlined by Ron and it is now available  
>>via:  
>  
>> ftp://ftp.tapr.org/tapr/dsp93/manuals/DSP-93\_Prog\_Guide.pdf  
>  
>When I read the pdf file with Acrobat Exchange 1.0 I get a line  
>overwritten. This is on page 7, right column , H-INTEL LOADER HIGH BITS.  
>  
>The third (last) line in the "typical lines of a loadable file:"  
>with the hex listing is overwritten.  
>  
>I have the correct text from the word version. So it is not really a problem.  
>Does anybody else see the same overprinting of this line?  
>  
>Boris DJ0EX SM0GJ  
>  
>End of Message

I don't think it is overwritten, but an attempt to display 75 characters in  
a "too small space."

Copy and paste the line to another application for proof.

Ron W5RKN

also:  
rparsons@bga.com

---

### 33. RE: [DSP-93:1758] Programming Guide pdf format

From: "Du Preez, Wessel" <x2987@transprt.csir.co.za>  
Date: Fri, 03 Nov 95 16:58:00 PST  
To: dsp-93 <dsp-93@tapr.org>  
Message-ID: <309ABB22@smtpgat2.csir.co.za>  
Rendered body type: text/plain

The same happened with my printout, but as you say, we do have the word  
version!  
The pdf version looks great and makes reading so much easier - thanks Greg!

Wessel, Z56BLY

-----  
From: dsp-93  
To: dsp-93  
Subject: [DSP-93:1758] Programming Guide pdf format  
Date: Friday, November 03, 1995 7:21AM

Greg wrote:  
> Well - after starting, stopping, and then startinug again I finsihed the  
>updates to the programming guide as outlined by Ron and it is now available  
>via:

> ftp://ftp.tapr.org/tapr/dsp93/manuals/DSP-93\_Prog\_Guide.pdf

When I read the pdf file with Acrobat Exchange 1.0 I get a line  
overwritten. This is on page 7, right column , H-INTEL LOADER HIGH BITS.

The third (last) line in the "typical lines of a loadable file:"  
with the hex listing is overwritten.

I have the correct text from the word version. So it is not really a  
problem.  
Does anybody else see the same overprinting of this line?

Boris DJ0EX SM0GJ

End of Message

---

### 34. Re: [DSP-93:1757] Revsion B of Modifications to the first batch of PacComm TNCs for DSP-93

From: ssalek@h-e.com  
Date: Fri, 3 Nov 95 09:34:01 PDT  
To: dsp-93@tapr.org  
Message-ID: <00000113.sm@h-e.com>  
Rendered body type: text/plain



Hi Mark, Gwyn, and others--

>Regarding drilling holes for trimpot adjustments - see previous posting.

After carefully measuring the Beta DSP-93 analog board last night, I believe that the PacComm-suggested hole locations will work out just fine. In fact, I marked and drilled mine, and the alignment was good enough to get a very tiny alignment tool into the slots to make level adjustments. Gwyn: can larger than 0.1" holes be drilled without cutting needed traces? The 0.1" diameter size is too small to insert all but the smallest blade.

I am now on the air with the DSP-93/PacComm TNC combination and everything seems to be working fine on 1200 AFSK. I will look forward to the upcoming firmware revision to get KISS and PASSTHRU modes.

73, Stan  
KD6CVL  
Sonoma, CA

---

### 35. Re: probe signals

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 4 Nov 1995 22:09:30 -0600  
To: frank wesley <f@hal-pc.org>  
Cc: dsp-93@tapr.org  
Message-ID: <v02130501acc1e5fd9733@[204.181.160.80]>  
Rendered body type: text/plain

>The trace through U211 is as follows:  
>2,3,5,6,7 and 4 are low  
>15,14,12,11,10 and 13 are high.  
>I have the Radio Shack probe and do not know how to read levels.  
>Typing a character on the keyboard gives no response.  
>I sent two msgs because I didnt know what address would reach you fast.  
>>

When connected to D93WE and working, I get for U211:

1-H  
2-L  
3-L  
4-H You got L  
5-L  
6-H You got L  
7-L  
8-L  
  
9-L  
10-H  
11-L You got H  
12-H  
13-L You got H  
14-H  
15-H  
16-H

Just as I suspected. As I said in [DSP-93:1720] Re: dsp-93:  
"Are you sure you have an appropriate serial connection? RTS asserted by the computer?"

You do not have RTS asserted. Your pin 6 is low. It MUST be high.  
You do not have DTR asserted. Your pin 4 is low. It MUST be high.

Either your serial connection is wrong or your software is not asserting RTS and DTR. As I have said before ProComm is often a real problem. Just because it works with TrakBox does not mean it will work with the DSP-93. RTS \_\_MUST\_\_ be asserted.

Do you have other software to use?

Ron W5RKN

also:  
rparsons@bga.com

---

### 36. Re: [DSP-93:1762] Re: probe signals

From: frank wesley <f@hal-pc.org>  
Date: Sun, 5 Nov 1995 08:45:04 -0559  
To: dsp-93@tapr.org, dsp-93@tapr.org

Message-ID: <199511051444.IAA05294@hal-pc.org>

Rendered body type: text/plain

At 10:23 PM 11/4/95 -0600, Ronald G. Parsons wrote:  
>>The trace through U211 is as follows:  
>>2,3,5,6,7and 4 are low  
>>15,14,12,11,10 and 13 are high.  
>>I have the Radio Shack probe and do not know how to read levels.  
>>Typing a character on the keyboard gives no response.  
>>I sent two msgs because I didnt know what address would reach you fast.  
>>>  
>  
>When connected to D93WE and working, I get for U211:  
>1-H  
>2-L  
>3-L  
>4-H You got L  
>5-L  
>6-H You got L  
>7-L  
>8-L  
>  
>9-L  
>10-H  
>11-L You got H  
>12-H  
>13-L You got H  
>14-H  
>15-H  
>16-H  
>  
>Just as I suspected. As I said in [DSP-93:1720] Re: dsp-93:  
>"Are you sure you have an appropriate serial connection? RTS asserted by the  
>computer?"  
>  
>You do not have RTS asserted. Your pin 6 is low. It MUST be high.  
>You do not have DTR asserted. Your pin 4 is low. It MUST be high.  
>  
>Either your serial connection is wrong or your software is not asserting  
>RTS and DTR. As I have said before ProComm is often a real problem. Just  
>because it works with TrakBox does not mean it will work with the DSP-93.  
>RTS \_\_MUST\_\_ be asserted.  
>  
>Do you have other software to use?  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com  
>  
>  
>  
>  
Yes I have D93WE. But I have not connected it as yet.  
I checked the RTS as I was told and it is off.  
I use a commercial 9-pin serial cable, with pin 1 to pin 1 etc.  
I will check it with my ohmmeter today.  
Name: Frank Wesley  
E-Mail: f@hal-pc.org

---

### 37. Re: [DSP-93:1763] Re: probe signals

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 5 Nov 1995 09:56:46 -0600  
To: dsp-93@tapr.org  
Cc: frank.wesley <f@hal-pc.org>  
Message-ID: <v02130500acc28ea336f7@[204.181.160.4]>  
Rendered body type: text/plain

>Yes I have D93WE. But I have not connected it as yet.  
>I checked the RTS as I was told and it is off.  
>I use a commercial 9-pin serial cable, with pin 1 to pin 1 etc.  
>I will check it with my ohmmeter today.  
>Name: Frank Wesley  
>E-Mail: f@hal-pc.org

But as I told you in [DSP-93:1720] Re: dsp-93, RTS must be asserted. Your software is not doing this. Your cable is probably OK. The most suspect item is your software.

If you have Windows, PLEASE try D93WE.

Ron W5RKN

also:  
rparsons@bga.com

---

### 38. Pacomm TNC Questions

From: "Bob Smith" <bsmith@msn.com>  
Date: Sun, 5 Nov 95 23:02:47 UT  
To: "'dsp-93'" <dsp-93@tapr.org>  
Message-ID: <UPMAIL01.199511052304000940@msn.com>  
Rendered body type: text/plain

Pacomm TNC Questions

Got mine on WED last week. Installed it per all of the messages but kept the serial ports separate to be able to load the other functions (like W9GR, etc.)

Some questions I could not seem to find the answers to:

- 1) The fastest radio speed is 1200, (BAUD Command) is this an oversight? or will the updated EPROM have 9600 speeds available?
- 2) What are the jumpers for on the TNC board? The instructions say that the DSP-93 documentation explains these but I see no reference.
- 3) Confirming the LEDS (l-r) DCD PTT STR CON PWR?
- 4) The PORT commnd does not work despite coming up in the list when HELP is issued ( I guess this may relate to my #2 above).

Thanks in advance for any help.

---

### 39. Re: [DSP-93:1765] Pacomm TNC Questions

From: ssalek@h-e.com  
Date: Mon, 6 Nov 95 09:56:32 PDT  
To: bsmith@msn.com (Bob Smith), dsp-93@tapr.org  
Message-ID: <00000116.sm@h-e.com>  
Rendered body type: text/plain

Hi Bob and others,

Here are my comments (and some answers to Bob's questions) about the PacComm board:

>1) The fastest radio speed is 1200, (BAUD Command) is this an oversight? or >will the updated EPROM have 9600 speeds available?

I noticed this too--I posted a question to Gwyn last week. The "Port 2" selections may actually control the radio port in this firmware revision, but I have not verified yet.

>2) What are the jumpers for on the TNC board? The instructions say that the >DSP-93 documentation explains these but I see no reference.

They are the PTT and UP/DOWN polarity jumpers for the two DSP-93 ports. They were previously needed on the TNC connector on the back of the DSP-93 to set these functions depending on the radio that you are using. The PacComm board just brings them out to a convenient header.

>3) Confirming the LEDS (l-r) DCD PTT STR CON PWR?

I don't have it in front of me, but that sounds right. Note that the included circuit diagram has these labeled by function with the corresponding component reference shown.

>4) The PORT commnd does not work despite coming up in the list when HELP is >issued ( I guess this may relate to my #2 above).

I noticed that too. I don't think its implemented in this firmware revision, but maybe Gwyn can explain.

By the way, my DSP-93/PacComm combo has been running continuously since last Thursday night on 1200 AFSK with no problems.

73, Stan  
KD6CVL

Sonoma, CA

ssalek@h-e.com

## 40. DSPLOAD1 - mods

From: "Bob Smith" <bsmith@msn.com>  
Date: Tue, 7 Nov 95 12:14:49 UT  
To: "'dsp-93'" <dsp-93@tapr.org>,  
      "'k4gvo@atl1.america.net'"  
      <k4gvo@atl1.america.net>  
Message-ID: <UPMAIL01.199511071216360108@msn.com>  
Rendered body type: text/plain

JIM IT WORKS LIKE A CHARM!!!

Thanks very much. I can now drag the OBJ file onto the DSPLOAD icon or simply double click on the OBJ file to load it up.

This is great, Thanks alot again.

-----  
From: k4gvo@atl1.america.net on behalf of Jim Lynch  
Sent: Wednesday, November 01, 1995 1:18 AM  
To: Bob Smith  
Subject: RE: [DSP-93:1704] AZTEC C Compiler Where??  
  
> Date: Mon, 30 Oct 95 19:05:20 UT  
> From: "Bob Smith" <bsmith@msn.com>  
> To: "Jim Lynch" <k4gvo@america.net>  
> Subject: RE: [DSP-93:1704] AZTEC C Compiler Where??  
  
> Actually I have no compiler Jim - was looking for the best way to get this  
> done into a DOS environment (WIN95). If you could do it that would be  
great.  
> Thanks.  
>  
>  
> -----  
> From: k4gvo@atl1.america.net on behalf of Jim Lynch  
> Sent: Monday, October 30, 1995 1:30 AM  
> To: Bob Smith; dsp-93@tapr.org  
> Subject: Re: [DSP-93:1704] AZTEC C Compiler Where??  
>  
> > Date: Sat, 28 Oct 1995 17:01:19 -0500  
> > Reply-to: dsp-93@tapr.org  
> > From: "Bob Smith" <bsmith@msn.com>  
> > To: dsp-93@tapr.org  
> > Subject: [DSP-93:1704] AZTEC C Compiler Where??  
>  
> > I wish to make a minor change to DSPLOAD so that .OBJ is not appended to  
> every parameter (See below). The source says that it was written for  
AZTEC  
>  
> > C. Where can I get this. I see the change that needs to be made and I  
> think  
> > I can do it, I just need to find AZTEC C. Thanks  
> >  
> > I wish to do this to take advantage of WIN95 environment. This way all I  
  
> > will have to do is drag and drop onto DSPLOAD and file, whether OBJ  
> appended  
> > or not, and DSPLOAD will execute it - OR associate OBJ files to DSPLOAD  
and  
>  
> > similarly double click on them.  
> >  
> > Not a big deal, just would like to do it.  
> >  
> > Thanks in advance.  
> >  
> >  
> Bob, I ported this to Linux, so I'm pretty sure I can do what you  
> want. What compiler do you use? I'll see if I can port it for you.  
>  
> Since I can't program the DSP-93, maybe I can contribute something  
> else.  
>  
> 73,  
> Jim.

> Jim Lynch                    Fayetteville, GA            K4GVO  
> '86 GL1200I                k4gvo@america.net        44.36.34.20  
>  
>  
OK, Bob, I've got one for you to test. Take a look at:  
ftp://ftp.america.net/pub/users/k4gvo/dspload1.exe

The dspload1.c files is there too, if you want to take a look at it.

Let me know how it works. If you like it, I'll package it and upload it to tapr.

73,  
Jim.  
I'm TDY 'til the weekend so I can't reply for a couple of days.

Jim.  
Jim Lynch                    Fayetteville, GA            K4GVO  
'86 GL1200I                k4gvo@america.net        44.36.34.20

---

## 41. Update on PacComm TNC for DSP-93

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Tue, 07 Nov 95 18:15:44 UTC  
To: dsp-93@tapr.org  
Message-ID: <9654@paccomm.com>  
Rendered body type: text/plain

Hello all:

I went to the Houston hamfest over the weekend and our booth was next to the AMSAT booth. Lots of fun.

Got back and noticed the message system acting funny, but took me about 24 hours to figure out the disk had filled up and I was getting no messages (even though there were new message numbers...).

Got that fixed, but have seen nothing in the DSP-93 SIG since Saturday. Mebbe I got unsubscribed for failure to accept mail, but my ISP is supposed to buffer for me.

Anyway, we're not hiding from the questions. Please ask again if I've not answered either here or in private. I sent a status message out this morning, but didn't get a copy back so don't know if it hit the SIG or not.

Shipping another batch of boards tomorrow or Thursday. Code will have adjustable baud rates on all ports. Boards have adjustment holes, etc.

I'll get the new EPROM image onto TAPR's ftp area - I could use some pointers on that.

We might have KISS fixed by Monday. Don't hold breath, but it is getting a lot of attention.

73,  
Gwyn

-----  
Gwyn Reedy, W1BEL                    gwyn@paccomm.com            W1BEL@amsat.org

PacComm Packet Radio Systems, Inc.            +(813) 874-2980    Fax: +(813) 872-8696  
4413 N. Hesperides St.                        BBS: +(813) 874-3078 (V.34)  
Tampa, FL 33614-7618 USA                      info@paccomm.com    http://www.paccomm.com/info

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## 42. Re: [DSP-93:1768] Update on PacComm TNC for DSP-93Hello all:

From: ssalek@h-e.com  
Date: Tue, 7 Nov 95 17:21:32 PDT  
To: dsp-93@tapr.org  
Message-ID: <0000011B.sm@h-e.com>  
Rendered body type: text/plain

>I'll get the new EPROM image onto TAPR's ftp area - I could use some  
>pointers on that.

Mark--can you help Gwyn with this??

Thanks,  
Stan  
KD6CVL

### 43. attn Gwyn: how to upload to dsp-93 site

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 08 Nov 1995 12:04:20 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511081215.HAA09066@camel.campbell.edu>  
Rendered body type: text/plain

Hi Gwyn (and interested others),

Sorry I missed this issue. Thanks to Stan for waking me up...

To upload to the dsp93 area, use anonymous ftp to ftp.tapr.org

ftp ftp.tapr.org (If this fails the first time, try a couple more times.)

and when asked for username, enter (without the quotes) "anonymous"  
and when asked for password, enter (without the quotes, change to fit your email address) "you@email.address"

Change to the directory ("cd") tapr/dsp93/upload. This directory will allow uploads. Be sure to issue a "bin" command to your ftp program to make sure that the upload is done in binary mode (it will be a binary file, right?). The command to upload a file (from a command line ftp program) is "put". It should prompt you for the name of the file.

After you upload the file(s), please send an email message describing the file(s) to me, your DSP-93 software librarian, and I will relocate the file into a more appropriate subdirectory and post a note to the dsp-93 mailing list.

I hope this helps to clarify the upload procedures. If I can help anymore, just ask. If you don't have ftp capability, let me know that too and we can arrange some other way of getting the file to me so that I may upload it for you.

Good luck! Having the EPROM images on the site will certainly expedite their distribution.

At 21:27 11/7/95 -0600, you wrote:

>  
>>I'll get the new EPROM image onto TAPR's ftp area - I could use some  
>>pointers on that.  
>  
>Mark--can you help Gwyn with this??  
>  
>Thanks,  
>Stan  
>KD6CVL  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

### 44. Re: DSP/TNC

From: ssalek@h-e.com  
Date: Wed, 8 Nov 95 09:47:14 PDT  
To: dlamont@central.co.nz, dsp-93@tapr.org  
Message-ID: <0000011D.sm@h-e.com>  
Rendered body type: text/plain

Hi Dave,

>DSP/TNC  
>Hi Stan, Just a veru quick query.  
>  
>When your TNC is switched on do BOTH the con  
>and sta lights flash, or just the con led.

I don't remember but I'll check tonight and let you know.

73,

Stan  
KD6CVL  
Sonoma, CA

---

### 45. Need help for IK0XBQ

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 8 Nov 1995 17:35:07 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500acc6ecfe220d@[204.181.160.12]>  
Rendered body type: text/plain  
Fron KO-23

From: IK0XBQ  
To: W5RKN  
Subject: DSP-93  
Keywords: <W> DSP-93

-----  
To : W5RKN  
From: IK0XBQ  
Time: 184843UTC  
Date: 08 Nov 1995  
-----

Hello, I Have built the dsp-93 kits but now have a problem:  
When the Hf\_93 obj is downloaded in memory, on td audio of radio port, a sound is generated. It is like a whistle and it is added to the modulation and no connection is permitted because modulation is over 100% and the wistle get the cause of tx stop on my rig!  
The whistle is present on hf\_93ae and hf\_93hte objs on the out of the external speaker!  
I hope in a your answer to my problem!  
best 73 IK0XBQ MAURIZIO  
I AM PRESENT ON KO-23,KO-25,UO-22!

Ron W5RKN

also:  
rparsons@bga.com

---

## 46. Help for DL3DA

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 8 Nov 1995 17:35:14 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130501acc6edf45ba8@[204.181.160.12]>  
Rendered body type: text/plain

>From KO-23

From: DL3DA  
To: W5RKN  
Subject: Tks update, getting crazy  
Keywords: DSP-93

-----  
To: W5RKN  
From: DL3DA  
Time: 183707 UTC  
Date: 08NOV95  
Title: Tks update, getting crazy

Hello Ron,

thank you for the fast answer. Checking the update info brings some more confusion. Indeed there is some mix of input and output at the TNC header. Seems as if TNC and MODEM have a divorce, which has to key the transmitter. So they decide to watchdog the LED.

Curiously this was not a problem. Checked the PTT line level vs. jumpers and got a position, where PTT line was tied down. The LED did not bother me. After the disappointment, that KISS was not implemented I was fixed on the missing 9k6 operation.

About this update I will check, what to do. Before fixing all that short-circuited inputs and outputs (which also depends a bit on software) I will wait for more 9k6 information. Maybe the - radio 1200Bd - in the software means no 9k6 at the moment.

73, Karl DL3DA in Goettingen

Ron W5RKN

also:  
rparsons@bga.com

---

#### 47. Re: [DSP-93:1772] Need help for IK0XBQ

From: fperkins@onramp.net  
Date: Wed, 8 Nov 1995 19:45:46 -0600  
To: dsp-93@tapr.org  
Message-ID: <199511090145.TAA08336@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Ron,

If it ends with an "e", it is a version that has the RX eye pattern on the DAC instead of the TX signal. The "e" versions won't do much good on TX! Nice eye patten for the scope though. Please advise XBQ if you have time.

73 Frank WB5IPM

---

#### 48. Re: [DSP-93:1771] Re: DSP/TNC

From: ssalek@h-e.com  
Date: Thu, 9 Nov 95 09:41:49 PDT  
To: dsp-93@tapr.org  
Message-ID: <00000125.sm@h-e.com>  
Rendered body type: text/plain

Hello again Dave,

>>DSP/TNC  
>>Hi Stan, Just a veru quick query.  
>>  
>>When your TNC is switched on do BOTH the con  
>>and sta lights flash, or just the con led.  
>  
>I don't remember but I'll check tonight and let you know.

As expected, mine works like yours: just the CON led flashes once during power-up. I'm sure that it is coded that way in firmware. The only other PacComm TNC that I have (I think it was made by PacComm) is my Heath HK-21 "pocket packet." That one powers up like the other PacComm TNCs that you are used to: both CON and STA light then go out.

73, Stan  
KD6CVL

---

#### 49. RE: [DSP-93:1765] Pacomm TNC Questions

From: "Bob Smith" <bsmith@msn.com>  
Date: Thu, 9 Nov 95 22:58:37 UT  
To: "dsp-93@tapr.org"@msn.com  
Message-ID: <UPMAIL01.199511092305400390@msn.com>  
Rendered body type: text/plain

Here aware my ?'s on the PACOMM TNC that got lost Gwynn.

-----  
From: dsp-93@tapr.org on behalf of Bob Smith  
Sent: Sunday, November 05, 1995 6:48 PM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1765] Pacomm TNC Questions

Pacomm TNC Questions  
Got mine on WED last week. Installed it per all of the messages but kept the serial ports separate to be able to load the other functions (like W9GR, etc.)

Some questions I could not seem to find the answers to:

- 1) The fastest radio speed is 1200, (BAUD Command) is this an oversight? or will the updated EPROM have 9600 speeds available?
- 2) What are the jumpers for on the TNC board? The instructions say that the DSP-93 documentation explains these but I see no reference.
- 3) Confirming the LEDS (l-r) DCD PTT STR CON PWR?
- 4) The PORT commnd does not work despite coming up in the list when HELP is issued ( I guess this may relate to my #2 above).



Thanks in advance for any help.

---

## 50. Re: [DSP-93:1775] Re: DSP/TNC

From: dlamont@central.co.nz  
Date: Fri, 10 Nov 1995 00:11:50 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511100011.NAA17229@central.co.nz>  
Rendered body type: text/plain

> Date: Thu, 9 Nov 1995 12:28:35 -0600  
> Reply-to: dsp-93@tapr.org  
> From: ssalek@h-e.com  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:1775] Re: DSP/TNC

>  
> Hello again Dave,  
>  
> >>DSP/TNC  
> >>Hi Stan, Just a veru quick query.  
> >>  
> >>When your TNC is switched on do BOTH the con  
> >>and sta lights flash, or just the con led.  
> >  
> >I don't remember but I'll check tonight and let you know.  
>  
> As expected, mine works like yours: just the CON led flashes once during  
> power-up. I'm sure that it is coded that way in firmware. The only other  
> PacComm TNC that I have (I think it was made by PacComm) is my Heath HK-21  
> "pocket packet." That one powers up like the other PacComm TNCs that you are  
> used to: both CON and STA light then go out.  
>  
> 73, Stan  
> KD6CVL  
>  
>  
>

Thank you Stan...looking fwd to the final eprom  
Kind Regards

Dave

```
| -----|
| David H Lamont|
| Internet dlamont@central.co.nz|
| Packet radio z12amd@z12amd.#40.nzl.oc|
| All amateur radio satellites|
Data, Fax and Voice 64-6-844-9117
```

---

## 51. Need more help for IK0XBQ

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 9 Nov 1995 20:18:33 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500acc8667b2f8c@[204.251.33.23]>  
Rendered body type: text/plain

>From K0-23

From: IK0XBQ  
To: W5RKN  
Subject: DSP-93  
Keywords: <W> DSP-93 PROBLEM

-----  
To : W5RKN  
From: IK0XBQ  
Time: 172932UTC  
Date: 09 Nov 1995  
-----

Hello RON,  
Tnx for the message! What WB5IPM say about "e" type of  
Hf\_93 objs I know. The problem for us (me and 3 other  
OM here in my Qth Terni having the dsp-93 kits with the  
seem problem) is present for all hf\_93 objs! the frequen-  
cy, like a whistle, for "e" objs type is getting out from  
the speaker instead of td audio but always present.  
Pratically, after the download of hf\_93a or hf\_93ht objs

putting td audio on a bf amplifier, a mid-high frequency is continuously present and, if a frame is putted out, it is added to this mid-high frequency.  
If i download the hf\_93ae or hf\_93hte objs ("e" type), the seem thing is putted out on the external speaker of DSP-93!  
Hope that the problem is solvable hi!  
Many tn timer for now Ron, hope in a reply!  
Best 73!  
IK0X BQ MAURIZIO ON KO-23, KO-25, UO-22

Ron W5RKN

also:  
rparsons@bga.com

---

## 52. Re: [DSP-93:1776] RE: Pacomm TNC Questions

From: gwyn@pacomm.com (Gwyn Reedy, W1BEL)  
Date: Fri, 10 Nov 95 06:26:14 UTC  
To: dsp-93@tapr.org  
Message-ID: <9808@pacomm.com>  
Rendered body type: text/plain

Bob Smith asked:

>The fastest radio speed is 1200, (BAUD Command) is this an oversight? or  
>will the updated EPROM have 9600 speeds available?

>2) What are the jumpers for on the TNC board? The instructions say that the DSP-93 documentation explains these but I see no reference.

>3) Confirming the LEDS (l-r) DCD PTT STR CON PWR?

>4) The PORT command does not work despite coming up in the list when HELP is  
>issued (I guess this may relate to my #2 above).

1. The fixed radio speed was an oversight. Next code release will have all speeds available on the radio port and on the DSP LOAD port.

2. The jumpers had to be installed to take the place of the lines which appeared on the DB-25 in the original DSP-93. They are for setting the PTT polarity and some frequency selection. Ron, W5RKN, advised us of the need to make provision for these lines. Perhaps he will point you to the proper DSP-93 documentation which explains them.

3. LEDS (l-r) DCD PTT STAtus CONnect PWR. Note: the STA LED does not come on and then extinguish during initialization as does a TNC-2. Only the CON LED does this. The DCD LED may also flicker during this time.

4. The PORT command is not implemented on this product. We have not tailored the manual nor the HELP function to match this particular product. Some commands, such as the PORT and SOFTDCD commands are not implemented on all products.

The command which will be implemented for enabling the DSP LOAD function, (the tying of the terminal serial port directly to the DSP LOAD serial port) is PASSTHRU ON. This will be an immediate command much like the TRANSPARENT command. Once it is ON, you are in this mode and the only way to get out is the same sequence that gets one out of TRANSPARENT mode, e.g. one second of silence, three ^C within one second, and an additional second of silence.

I have the next code release and will upload it as soon as we have finished a quick shakedown.

- - - - -  
Gwyn Reedy, W1BEL gwyn@pacomm.com W1BEL@amsat.org - - - - -

PacComm Packet Radio Systems, Inc. + (813) 874-2980 Fax: + (813) 872-8696  
4413 N. Hesperides St. BBS: + (813) 874-3078 (V.34)  
Tampa, FL 33614-7618 USA info@pacomm.com http://www.pacomm.com/info

---

## 53. More information about the PacComm TNC for the DSP-93

From: gwyn@pacomm.com (Gwyn Reedy, W1BEL)  
Date: Fri, 10 Nov 95 06:50:31 UTC  
To: dsp-93@tapr.org  
Message-ID: <9809@pacomm.com>

Rendered body type: text/plain

Ron Parsons, W5RKN, asked:

1. What is the syntax for the DSP serial port function?

The command is PASSTHRU. There is no short form of the command planned.  
>From command mode one either gives the PASSTHRU <CR> or PASSTHRU ON <CR> command. I'm not sure which is the final form. That immediately links the two async ports together. The two ports do not need to be at the same speed, but - there is no hardware flow control on the DSP port so there will be problems with possible TNC port buffer overflow in the following two situations: Data coming from DSP to TNC with TNC data rate lower than DSP, and DATA going from the TNC to the DSP with the TNC data rate faster than the DSP AND if hardware flow control is NOT implemented between the TNC and the computer terminal. I will look into having the buffer enlarged on the DSP Port INPUT side.

The release of code (11/07) being posted today is supposed to have the BAUD command enabled to set various baud rates on both the HDLC port and DSP LOAD port.

TNCs shipped after serial number 11 have the necessary fixes to operate 'out of the box' and have the DSP trimpot adjustment holes drilled. We were able to drill 0.150 diameter. That is well above 1/8 inch and should pass a screwdriver easily. You can't use a large screwdriver anyway as the slots on the trimpots are very small.

We are not planning to revise this circuit board. The problems noticed with the initial batch are cured by several minor trace cuts and the addition of one wire about one inch long. The board does not appear 'butchered' in any way. "We don't ship ugly products!"

I'm hopeful of another code release early next week, probably with the KISS implemented and possibly the PASSTHRU. Progress is dependent on multi-tasking the programmer with other (larger) projects.

-----  
Gwyn Reedy, W1BEL                      gwyn@paccomm.com                      W1BEL@amsat.org                      -----

PacComm Packet Radio Systems, Inc.                      +(813) 874-2980    Fax: +(813) 872-8696  
4413 N. Hesperides St.                      BBS: +(813) 874-3078 (V.34)  
Tampa, FL 33614-7618 USA                      info@paccomm.com    http://www.paccomm.com/info

---

## 54. RE: [DSP-93:1779] RE: Pacomm TNC Questions

From: "Bob Smith" <bsmith@msn.com>  
Date: Fri, 10 Nov 95 14:38:16 UT  
To: "'dsp-93'" <dsp-93@tapr.org>, "Gwyn Reedy, W1BEL" <gwyn@paccomm.com>  
Message-ID: <UPMAIL01.199511101442350645@msn.com>  
Rendered body type: text/plain

Thanks Gwyn, I appreciate the answers - I do not have access to a eprom programmer (at least not that I know of - can I do it on a PC?). That being the case, can I have one shipped to me for exchange?

Or would a better route be to ship it back to you and have the board mods made and the new eprom installed? When would be the optimal time to ship if this is the preferred route?

-----  
From: dsp-93@tapr.org on behalf of Gwyn Reedy, W1BEL  
Sent: Friday, November 10, 1995 6:59 AM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1779] RE: Pacomm TNC Questions

Bob Smith asked:

>The fastest radio speed is 1200, (BAUD Command) is this an oversight? or  
>will the updated EPROM have 9600 speeds available?

>2) What are the jumpers for on the TNC board? The instructions say that the DSP-93 documentation explains these but I see no reference.

>3) Confirming the LEDS (l-r) DCD PTT STR CON PWR?

>4) The PORT command does not work despite coming up in the list when HELP is issued (I guess this may relate to my #2 above).

1. The fixed radio speed was an oversight. Next code release will have all speeds available on the radio port and on the DSP LOAD port.

2. The jumpers had to be installed to take the place of the lines which appeared on the DB-25 in the original DSP-93. They are for setting the PTT polarity and some frequency selection. Ron, W5RKN, advised us of the need to make provision for these lines. Perhaps he will point you to the proper DSP-93 documentation which explains them.
3. LEDS (l-r) DCD PTT STATUS CONNECT PWR. Note: the STA LED does not come on and then extinguish during initialization as does a TNC-2. Only the CON LED does this. The DCD LED may also flicker during this time.
4. The PORT command is not implemented on this product. We have not tailored the manual nor the HELP function to match this particular product. Some commands, such as the PORT and SOFTDCD commands are not implemented on all products.

The command which will be implemented for enabling the DSP LOAD function, (the tying of the terminal serial port directly to the DSP LOAD serial port) is PASSTHRU ON. This will be an immediate command much like the TRANSPARENT command. Once it is ON, you are in this mode and the only way to get out is the same sequence that gets one out of TRANSPARENT mode, e.g. one second of silence, three ^C within one second, and an additional second of silence.

I have the next code release and will upload it as soon as we have finished a quick shakedown.

-----  
Gwyn Reedy, WIBEL                      gwyn@paccomm.com                      WIBEL@amsat.org  
  
PacComm Packet Radio Systems, Inc.                      +(813) 874-2980    Fax: +(813) 872-8696  
4413 N. Hesperides St.                      BBS: +(813) 874-3078 (V.34)  
Tampa, FL 33614-7618 USA                      info@paccomm.com    http://www.paccomm.com/info

---

## 55. clean MPU

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Fri, 10 Nov 1995 18:20:34 +0000  
To: gwyn@paccomm.com  
Cc: dsp-93@tapr.org  
Message-ID: <199511101832.NAA26763@camel.campbell.edu>  
Rendered body type: text/plain

Hi Gwyn,

Well by golly I think I am in business. Regarding my "failure to initialize" of the PacComm TNC for DSP-93, I did two rounds of cleaning of the 100 pins of U5, the MPU surface mount chip. I used several Q-tips and rubbing alcohol on two occasions. After allowing an hour or two of dry time after the second cleaning, I find that the unit starts up each time I power it up. In addition, the unit has not yet done a bbRAM reload upon powering the unit up in dozens of off/on switches in the past day. The unit does, however take about 0.5-1.0 sec longer to initialize the first time it is turned on after being off for several hours. But it \*does\* currently initialize and \*does not\* reset the unit to default bbRAM parameters.

So, I think you are correct about the source of my problem with the unit initializing being "dirty pins" (solder resin?) on U5. Thanks for directly me down this path.

Now, another question. Having unit serial number 8, "I ain't got no holes". Checking out my drill bits, I have a 9/64" (0.140625") bit that sounds right for the job. Could you \*PLEASE\* do an ASCII art version of the board showing the LEDs and the 4 holes/measurements? Or post a .gif of a drilled board? I might try this, but want to only do it once (the correct way!).

Thanks!

Mark L. Hammond    [KC4EBR]

---

## 56. Re: [DSP-93:1782] clean MPU

From: Doug Rorem <rorem@mana.eecs.uic.edu>  
Date: Fri, 10 Nov 1995 17:12:50 -0600  
To: dsp-93@tapr.org  
Cc: hammond@camel.campbell.edu  
Message-ID: <rorem-9510102312.AA000726467@mana.eecs.uic.edu>  
Rendered body type: text/plain

>Hi Gwyn,  
>  
>Well by golly I think I am in business. Regarding my "failure to  
>initialize" of the PacComm TNC for DSP-93, I did two rounds of cleaning of  
>the 100 pins of U5, the MPU surface mount chip. I used several Q-tips and  
>rubbing alcohol on two occasions. After allowing an hour or two of dry time  
>after the second cleaning, I find that the unit starts up each time I power  
>it up. In addition, the unit has not yet done a bBRAM reload upon powering  
>the unit up in dozens of off/on switches in the past day. The unit does,  
.....

Mark,

Rubbing alcohol isn't the best solvent for solder resin. Usually, when alcohol is used for something electronic, they specify denatured alcohol since rubbing alcohol leaves a residue. You might want to try a commercial product from somebody like Chemtronics, Kennesaw GA. Specialized [800-866-5353] sells their stuff. They make something like Contact Clean 2000 which would do what you want (they used to have a freon based product, but that's gone now due to the EPA and CFC reduction).

--

|                                   |                        |
|-----------------------------------|------------------------|
| Doug Rorem                        |                        |
| University of Illinois at Chicago | (312)-996-5439 [voice] |
| EECS Department RM 1120           | (312)-413-1065 [fax]   |
| 851 S. Morgan Street              | (708)-996-2226 [pager] |
| Chicago, IL 60607-7053            | rorem@uic.edu          |

---

## 57. RE: [DSP-93:1704] AZTEC C Compiler Where??

From: bobsmith@mail.i2020.net (Robert L. Smith)  
Date: Sun, 12 Nov 95 08:49:45 EST  
To: "Bob Smith" <bsmith@msn.com>  
Message-ID: <Chameleon.951112085854.bobsmith@>  
Rendered body type: text/plain

>  
>I wish to make a minor change to DSPLOAD so that .OBJ is not appended to  
>every parameter (See below). The source says that it was written for AZTEC  
>C. Where can I get this. I see the change that needs to be made and I think  
>I can do it, I just need to find AZTEC C. Thanks  
-- snip

Hello Bob Smith de Bob Smith

I used Aztec C several years ago for some embedded systems development before Turbo-C, etc became available. Should have a copy in my archives. You didn't mention which target system but I assume you me for IBM PC, etc.

My Aztec C code was highly portable to Turbo-C (and later Borland C, etc) so I suggest you just go ahead and transport it to Turbo/Borland C compiler and get it over with. Others would probably appreciate that.

If you don't want to tackle that send me a copy before and after changes and I'll see if I can get it to compile on my Aztec system. We'll have to find a common ftp site, possibly you can access ftp.i2020.net, I think they have an incoming available in /pub

-----  
Robert L. Smith                      804/745-1065                      bobsmith@i2020.net  
Smith Machine Works, Inc.                                      wa4ypv@w4za.ampr.org

---

## 58. Memory Problems

From: "Manuel A. Maseda" <mmaseda@Packet.Net>  
Date: Mon, 13 Nov 1995 00:14:08 -0500  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BAB15D.0A49E600@clw007.packet.net>  
Rendered body type: text/plain

I just completed assembling my DSP-93 and appear to have a problem. The unit seems to run programs such as the instruments some of the time and hangs up some of the time. Doesn't seem to be heat related, (happens on cold startups as well). I attempted to run the various memory programs and seemed to get mixed results. This is what I got:

In low speed mode, running program 8 from the monitor program I get a steady repeating 123457.

In high speed mode, running program 8 from the monitor program It just goes back to the prompt without displaying anything.

In low speed mode, typing t from the monitor program I get the message "Error Locations:" but thats it. System hangs but doesn't display any additional information and doesn't go back to the prompt.

In high speed mode, typing t from the monitor program I get the message "Error Locations:" but thats it. System doesn't display any additional information and goes back to the prompt.

In low speed mode, downloading memtest from D93WE I get a steady repeating 1234567.

In high speed mode, downloading memtest from D93WE I get a G123456E:\*, where \* is a small vertical bar character and the system hangs.

I've swapped all of the SRAM chips around and around but still get identical results. Anyone got any ideas what might be wrong?

Manuel WF1J

---

## 59. Re: [DSP-93:1785] Memory Problems

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 13 Nov 1995 08:38:31 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130501acccfd37b6a8@[204.181.160.26]>  
Rendered body type: text/plain

>I just completed assembling my DSP-93 and appear to have a problem. The  
>unit seems to run programs such as the instruments some of the time and =  
>hangs up some of the time. Doesn't seem to be heat related, (happens on =  
>cold startups as well). I attempted to run the various memory programs =  
>and seemed to get mixed results. This is what I got:

>  
>In low speed mode, running program 8 from the monitor program I get a =  
>steady repeating 123457.

>  
>In high speed mode, running program 8 from the monitor program It just =  
>goes back to the prompt without displaying anything.

>  
>In low speed mode, typing t from the monitor program I get the message  
>"Error Locations:" but thats it. System hangs but doesn't display any =  
>additional information and doesn't go back to the prompt.

>  
>In high speed mode, typing t from the monitor program I get the message  
>"Error Locations:" but thats it. System doesn't display any additional =  
>information and goes back to the prompt.

>  
>In low speed mode, downloading memtest from D93WE I get a steady =  
>repeating 1234567.

>  
>In high speed mode, downloading memtest from D93WE I get a G123456E:\*,  
>where \* is a small vertical bar character and the system hangs.

>  
>  
>I've swapped all of the SRAM chips around and around but still get =  
>identical

>results. Anyone got any ideas what might be wrong?

>  
>Manuel WF1J

I could be a problem with the chips around the clock circuit. U114 and U115.

Make sure thay are S chips and not ALS or something else. You might try changing out these with the fastest versions you can find.

Ron W5RKN

also:  
rparsons@bga.com

---

## 60. RE: [DSP-93:1704] AZTEC C Compiler Where??

From: "Bob Smith" <bsmith@msn.com>  
Date: Mon, 13 Nov 95 18:20:39 UT  
To: "Robert L. Smith" <bobsmith@mail.i2020.net>, "dsp-93@tapr.org"@msn.com  
Message-ID: <UPMAIL01.199511131825130528@msn.com>  
Rendered body type: text/plain

Thanks Bob de Bob. I got a compile already that got me squared away.  
Thanks.

-----  
From: Robert L. Smith  
Sent: Sunday, November 12, 1995 8:49 AM  
To: Bob Smith; dsp-93@tapr.org  
Subject: RE: [DSP-93:1704] AZTEC C Compiler Where??

>  
>I wish to make a minor change to DSPLOAD so that .OBJ is not appended to  
>every parameter (See below). The source says that it was written for AZTEC  
>C. Where can I get this. I see the change that needs to be made and I  
think  
>I can do it, I just need to find AZTEC C. Thanks  
-- snip

Hello Bob Smith de Bob Smith

I used Aztec C several years ago for some embedded systems development before

Turbo-C, etc became available. Should have a copy in my archives. You  
didn't  
mention which target system but I assume you me for IBM PC, etc.

My Aztec C code was highly portable to Turbo-C (and later Borland C, etc) so  
I  
suggest you just go ahead and transport it to Turbo/Borland C compiler and  
get it over  
with. Others would probably appreciate that.

If you don't want to tackle that send me a copy before and after changes and  
I'll see if I can get it to compile on my Aztec system. We'll have to find a  
common  
ftp site, possibly you can access ftp.i2020.net, I think they have an  
incoming  
available in /pub

-----  
Robert L. Smith                      804/745-1065              bobsmith@i2020.net  
Smith Machine Works, Inc.              wa4ypv@w4za.ampr.org

---

## 61. RE: [DSP-93:1786] Re: Memory Problems

From: "Manuel A. Maseda" <maseda@Packet.Net>  
Date: Mon, 13 Nov 1995 15:54:28 -0500  
To: "dsp-93@tapr.org" <dsp-93@tapr.org>  
Message-ID: <01BAB1E0.6D753B20@clw002.packet.net>  
Rendered body type: text/plain

-----  
From: Ronald G. Parsons[SMTP:w5rkn@amsat.org]  
Sent: Monday, November 13, 1995 9:58 AM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1786] Re: Memory Problems

>I just completed assembling my DSP-93 and appear to have a problem. The unit seems to run programs  
such as the instruments some of the time and hangs up some of the time. Doesn't seem to be heat  
related, (happens on cold startups as well). I attempted to run the various memory programs and seemed  
to get mixed results. This is what I got:

>  
>In low speed mode, running program 8 from the monitor program I get a  
>steady repeating 123457.  
>  
>In high speed mode, running program 8 from the monitor program It just  
>goes back to the prompt without displaying anything.  
>  
>In low speed mode, typing t from the monitor program I get the message  
>"Error Locations:" but thats it. System hangs but doesn't display any  
>additional information and doesn't go back to the prompt.  
>  
>In high speed mode, typing t from the monitor program I get the message  
>"Error Locations:" but thats it. System doesn't display any additional  
>information and goes back to the prompt.  
>  
>In low speed mode, downloading memtest from D93WE I get a steady repeating 1234567.  
>  
>In high speed mode, downloading memtest from D93WE I get a G123456E:\*, where \* is a small vertical bar  
character and the system hangs.

>  
>  
>I've swapped all of the SRAM chips around and around but still get  
>identical results. Anyone got any ideas what might be wrong?  
>  
>Manuel WF1J

I could be a problem with the chips around the clock circuit. U114 and U115.

Make sure they are S chips and not ALS or something else. You might try changing out these with the fastest versions you can find.

Ron W5RKN

also:  
rparsons@bga.com

Ron,

I've tried several different make 74S03 chips but no change. I'll see if I can hunt up some 74S122 chips and see if that makes a difference.

Thanks,  
Manuel WF1J

---

## 62. Re: DSP-93 Memory Problems

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 13 Nov 1995 22:09:19 -0600  
To: "Manuel A. Maseda" <mmaseda@Packet.Net>  
Cc: dsp-93@tapr.org  
Message-ID: <v02130500accdc611e6f2@[204.251.33.67]>  
Rendered body type: text/plain

>Ron,  
>  
>Looks like you were right. Does seem to be a clock problem. When I cut  
>the trace at the J100 jumper and jumper into the slow position all of the  
>memory failures disappear. I tried replacing the 74S03 and 74S112 chips  
>with several makes I had around here but didn't seem to make a difference  
>at high speed. The makes I tried were NTE and National Semiconductor. Do  
>you know of a particular make that seems to work? I also replaced the  
>40mhz osc but that also didn't seem to make a difference.  
>  
>Manuel WF1J

Unfortunately, you've done everything I can think of. If you have access to a good scope, you might try looking at the output of the clock osc. and associated circuits.

One person reported a clock that did not transition from rail to rail. I don't have a scope fast enough to tell you what to look for.

Sorry I have no further ideas. I'll cross-post this to the list to see if anyone else might help.

Ron W5RKN

also:  
rparsons@bga.com

---

## 63. Re: [DSP-93:1779] RE: Pacomm TNC Questions

From: ssalek@h-e.com  
Date: Wed, 15 Nov 95 15:32:45 PDT  
To: dsp-93@tapr.org  
Message-ID: <00000132.sm@h-e.com>  
Rendered body type: text/plain

Hello all--

I haven't seen anything posted that is related to the new TNC firmware that Gwyn uploaded last Friday, so I thought I'd report my experience.

I downloaded the 1107 version of the firmware last weekend and programmed a new 27C512. Everything went well with the installation, and the unit powered up



with no problems. The BAUD command choices are rewritten to be specific to the DSP-93, and the RADIO port now has a full complement of baud rate choices. There are also choices for the DSP LOAD port, but that feature is still not implemented so those selections have no apparent meaning at the moment. Other than the BAUD command, I didn't see anything different from the late October date firmware that was shipped with my TNC board.

So we still need KISS and DSP LOAD to make this a truly usable and convenient TNC for the DSP-93.

73,

Stan  
KD6CVL

---

## 64. TNC for DSP-93 update

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Thu, 16 Nov 1995 22:09:31 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511162210.RAA05931@camel.campbell.edu>  
Rendered body type: text/plain

Hi Stan (and others),

Thanks for the update on how your Paccomm TNC for DSP-93 is doing. I too was wondering if anybody had burned an eprom or not.

I had to trade my original unit in for a different one. My unit just would not initialize correctly. I thought I had the trouble cured by cleaning the CPU, but that appeared to be a short term fix. The problem came back. PacComm exchanged my unit for another one - no muss, no fuss. Was grateful for the trade.

I have seen that the unit "pretends" to go into KISS mode with the 1107 eproms...but apparently doesn't. I did see that the unit will now do 9600 "DSP HDLC" speed (and faster). To test this out, I just printed some of the KO-23 pass at 9600 DSP HDLC, and 19.2k terminal speed. See below (not in KISS mode, mind you). We are getting closer...

HL01-12>BBSTAT <UI>:FULL 1 a : KP4EOP HH2B  
HL01-11>N4NR <UI>:NO -1 N4NR

HL01-11>N3FLY <UI>:NO -1 N3FLY

HL01-11>WA4SCA <UI>:NO -1 WA4SCA

HL01-11>W0TUP <UI>:NO -1 W0TUP

HL01-11>K4UPL <UI>:NO -1 K4UPL

HL01-11>W1QJR <UI>:NO -1 W1QJR

Mark L. Hammond [KC4EBR]

---

## 65. PACOMM Help

From: "Bob Smith" <bsmith@msn.com>  
Date: Sat, 1 Jan 94 05:13:52 UT  
To: "'dsp-93'" <dsp-93@tapr.org>  
Message-ID: <UPMAIL01.199511190259080277@msn.com>  
Rendered body type: text/plain

Greetings - got the new board from PACOMM today and having some problems.

1200 bd fine and no probs.

9600 can hear.

TX just fine but on rcv I get solid DCD lights on both boards but nothing to the terminal. Any ideas?

73 de Bob.

---

## 66. Re: [DSP-93:1792] PACOMM Help

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Sun, 19 Nov 1995 06:13:23 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511190615.BAA00219@camel.campbell.edu>

Rendered body type: text/plain

Hi Bob,

If there is NO audio coming into the unit through your 9600 baud receive connection (radio off for example), you would see just what you describe-both the DSP-93 (LED 6) and TNC (left most) DCD lights on. Do you maybe have a break in your 9600 bps receive audio wire or connection?

Just a thought...

At 21:40 11/18/95 -0600, you wrote:

>Greetings - got the new board from PACOMM today and having some problems.  
>  
>1200 bd fine and no probs.  
>  
>9600 can hear.  
>  
>TX just fine but on rcv I get solid DCD lights on both boards but nothing to  
>the terminal. Any ideas?  
>  
>73 de Bob.  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 67. RE: [DSP-93:1793] Re: PACOMM Help

From: "Bob Smith" <bsmith@msn.com>  
Date: Sun, 19 Nov 95 13:36:07 UT  
To: "'dsp-93'" <dsp-93@tapr.org>  
Cc: "'dsptnc@paccomm.com'" <dsptnc@paccomm.com>  
Message-ID: <UPMAIL01.199511191337520976@msn.com>  
Rendered body type: text/plain

Thanks Mark, what I meant is that the DCD LEDs go on only when 9.6 data is there.

I have another radio ad 9600 TNC and have been experimenting directly. On any combo, I am not able to get rec data up to the screen.

I was thinking that it was some sort of PACOMM setting that I was missing or something like that.

Thanks.

-----  
From: dsp-93@tapr.org on behalf of Mark L. Hammond  
Sent: Sunday, November 19, 1995 1:26 AM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1793] Re: PACOMM Help

Hi Bob,

If there is NO audio coming into the unit through your 9600 baud receive connection (radio off for example), you would see just what you describe-both the DSP-93 (LED 6) and TNC (left most) DCD lights on. Do you maybe have a break in your 9600 bps receive audio wire or connection?

Just a thought...

At 21:40 11/18/95 -0600, you wrote:

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>  
>TX just fine but on rcv I get solid DCD lights on both boards but nothing to  
>the terminal. Any ideas?  
>  
>73 de Bob.  
>  
>  
>

## 68. OOPS!! on 74S122

From: "Manuel A. Maseda" <mmaseda@Packet.Net>  
Date: Sun, 19 Nov 1995 20:24:13 -0500  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BAB6BD.00D2D040@clw003.packet.net>  
Rendered body type: text/plain

I just checked and found out that I was really looking for a 74S112. Found it in the Newark catalog. Sorry for the previous message.

Manuel WF1J

---

## 69. Source for 74S122

From: "Manuel A. Maseda" <mmaseda@Packet.Net>  
Date: Sun, 19 Nov 1995 20:11:11 -0500  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BAB6BB.35ABC8A0@clw003.packet.net>  
Rendered body type: text/plain

I'm looking for a source to buy a replacement 74S122 for my DSP-93. I've checked all my common IC sources (Newark, Digi-Key, James, Mouser, JDR) and no one seems to carry it. Any ideas where to find or suitable replacement?

Manuel WF1J

---

## 70. Re: [DSP-93:1778] Need more help for IK0XBQ

From: fperkins@onramp.net  
Date: Wed, 22 Nov 1995 18:03:55 -0600  
To: dsp-93@tapr.org  
Message-ID: <199511230003.SAA24563@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Ron,

Crazy times as always. Anyway, I did take today off and tweaked the 300 bps packet for "no TX out unless PTT".

Could you forward this on to XBQ?

Happy Turkey Day!

73 Frank WB5IPM

\*\*\*\*\*

November 22, 1995

Hello OM,

The D/A converter in the DSP-93 is always connected to the TX output pots for both radio 1 and radio 2, plus the audio amplifier. There is no possibility to send the audio to just one place with software. So, the DSP-93 will output a signal from the audio amplifier even when modem software is loaded. Your units are operating as expected.

I modified HF\_93HT.OBJ to HF93K1.OBJ, which is at the bottom of this message. HF93K1.OBJ will not output a signal unless PTT is sent from the TNC. So, you will not hear the modem TX signal except when transmitting.

Sorry I cannot help more at this time, but I have a very busy project at work.

73 Frank WB5IPM

-----

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Frank H. Perkins, Jr."

-----  
:18200000FF801008FF80106DFF801073FF801008CE01C808CE07CE0357  
:18201800CE08D00180356002E702FE8011D3D00100756002E702FE8098  
:1820300011D3D00140356002E702FE8011D3C800CE37CE20D001002015  
:182048006004CA006061CE00CE1FD00100036061CE1FD0010227606199  
:18206000CE1FD00100036061CE1FD0012C5A6061CE1FD001000360615F  
:18207800CE1FD0012A546061CE1FCE01D00100306004CA0060626063E3  
:182090006064606560666067606A606B606C606D606E0010190609FB  
:1820A800CA00D000039F5588CA00CB5F60A0D000033E5588CA00CB5F31  
:1820C00060A0D00003325588CA00CB0A60A0D300033CCE005500FF80D3  
:1820D800106A20006060FE801077CE00CE2620616001CE00CE262062A9  
:1820F000D00504006062E6622A6068632063D0030080F380108920623C  
:18210800D00502006062FF80108D2062D004FDF60622063D200039FFF  
:18212000558A6080D10003FE5589A000CA00CB5F5C9011E8CE156B630E  
:182138002063D0030048F38010A6D00100486063FF8010AE2063D0025A  
:182150000048F18010AED001FFB86063D000033B5588CB09569056803A  
:1821680020636080CE236063558B3C803863CE14D200033E558A60805D  
:18218000D100039D5589A000CA00CB5F5C901248CE156B632063D00317  
:182198007D0F38010D2D00102C96067FE801142FE80119A2063106EA5  
:1821B0006063F48010E12062D004BFFF6062FF8010E52062D00540000E  
:1821C80060622069F38010F48A662066D0040200F58010F42068D0051B  
:1821E00000016068FF8010F82068D004FFFE60688A662066D0048000AC  
:1821F800F58011082069F3801103CD0160692064D0020C91FF80110E09  
:18221000D001019060692064D0020D926064D0034000F2801114606464  
:18222800CA0009646865D00112A8006558652265D004FFFC60618A66E6  
:182240002066D0040200F6801127CA0060612067F280112ECD01606724  
:18225800FF8011342062D00501006062FF8011382062D004FEFF6062B3  
:182270002062D004FBFF6062E662C808E702C800EB68CE26550020635C  
:18228800D0030776F3801156C8082002D0050080D004FFBF6002C80011  
:1822A0002068D004FF3F6068FF8011992063D0030334F3801169C80851  
:1822B8002002D0050040D004FF7F6002C8002068D004FF3F6068FF807A  
:1822D00011992063D0020334F380117AC8082002D004FF3F6002C80094  
:1822E8002068D004FF3F6068FF8011992063D0020776F380118DC808A0  
:182300002002D004FF3F6002C8002068D0050040D004FF7F6068FF8031  
:182318001199C8082002D004FF3F6002C8002068D0050080D004FFBF66  
:182330006068CE262063106BF28011A2206BD0020064606B206BF3802C  
:1823480011AB406B496AD00354F6686B606A2063106DF48011B3206DE4  
:18236000D0030064606D206DF18011BC406D496CD00254F6686D606C77  
:18237800206B006DCE19606E206ED0030320F38011CAD0010320606E0C  
:18239000FF8011D2206ED0020320F18011D2D001FCE0606ECE26C2FFCC  
:1823A800FE8011D9FE8011D9CE26C2FFFE8011DFFE8011DFCE26C2FF07  
:1823C000C3FF5588FB9011E1558AFB9011E0CE26000200070002FFF895  
:1823D800FFF80005000E0002FFFEFFFF2000D00180000FFE5FFF10012F7  
:1823F0000018FFDFFFEFFFB0003FFFB00050020000FFFC8FFBC002CFB  
:182408000088001CFF53FF6800820117000DFEB2FF21010101A0FFD571  
:18242000FE13FF0A018901EFFF80FDAFF3001E501E5FF30FDAFF8090  
:1824380001EF0189FF0AFE13FFD501A00101FF21FEB2000D011700820A  
:18245000FF68FF53001C0088002CFFBCFFC8000F00200005FFFB000338  
:18246800FFBF8FFFEFFFD00180012FFF1FFE500000018000DFFF2FFEF77  
:182480000002000E0005FFF8FFF8000200070002000400030003000329  
:182498000002000200010000FFFEFFFCFFFAFFF7FFF4FFF1FFEDFFFA88  
:1824B000FFE6FFE3FFE0FFDEFDCFFDCFFDDFFE0FFE4FFEBFFF4FFF62  
:1824C800000C001C002F0043005A0072008C00A700C200DE00F90113B6  
:1824E000012C01440158016B017A0185018D01910191018D0185017A6B  
:1824F800016B01580144012C011300F900DE00C200A7008C0072005AE9  
:182510000043002F001C000CFFFFFFF4FFEBFFE4FFE0FFDDFFDCFFDCEA  
:18252800FFDEFFE0FFE3FFE6FFEAFEDFFF1FFF4FFF7FFFAFFCFFFE79  
:182540000000000100020002000300030004000000320064009645



and was wondering if it would receive them (it has a "wide-FM" mode) using my DSP-93 and Frank's APT code.

Anybody know which NOAA birds are active and transmitting?

Thanks,

Mark L. Hammond [KC4EBR]

---

## 75. Re: [DSP-93:1799] Gosh ?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Mon, 27 Nov 1995 20:40:27 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500ace0267ca1d3@[204.181.160.87]>  
Rendered body type: text/plain

>Anyway -- this is to announce a Spring run of the DSP-93. TAPR will be  
>taking orders up until January 15th for a Spring (around Dayton) delivery.  
>Please pass the word on the various channels.  
>  
>Hope to be able to do another run of a hundred.  
>  
>Cheers - Greg

With the TAPR office closed from December 18 through January 15, does this mean you should change the deadline for orders to the end of January?

Ron W5RKN

also:  
rparsons@bga.com

---

## 76. TNC/93 on 9600 Packet

From: "Bob Smith" <bsmith@msn.com>  
Date: Tue, 28 Nov 95 03:20:02 UT  
To: "'dsp-93'" <dsp-93@tapr.org>  
Message-ID: <UPMAIL01.199511280325490980@msn.com>  
Rendered body type: text/plain

Anyone get their TNC from Paccomm and the dsp-93 to run on 9600 packet? I'm using the 11/07 eprom and board and can't get it to rcv data. Send just fine and I get both DCD solid on RCV but won't connect (connect LED lighting) or send output to the terminal. While I monitor on another system I see a connect.

Thanks.

---

## 77. yes=>Re: TNC/93 on 9600 Packet

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Tue, 28 Nov 1995 04:08:31 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511280414.XAA21965@camel.campbell.edu>  
Rendered body type: text/plain

Hi Bob,

Yes, I have printed both K0-23 and K0-25 with the DSP-93/TNC from PacComm at 9600 baud. It prints like gang-busters. Have you tried these satellites?

I can "hear" xmit audio from the DSP-93/TNC combo on another receiver as well, but have not been able to really test the xmit since the only thing I can link to at 9600 is a bird. Nobody local here runs it.

I'll second Stan's request for the KISS eproms (more important than the PASSTHRU if you ask me...). Can't wait to get back on the 9600 birds!

Too bad we're not in simplex range, Bob! I could listen to your unit all day ;-)

At 21:36 11/27/95 -0600, you wrote:

>Anyone get their TNC from Paccomm and the dsp-93 to run on 9600 packet? I'm

Mark L. Hammond [KC4EBR]

## 78. Re: [DSP-93:1804] yes=>Re: TNC/93 on 9600 Packet

From: Roy Welch <rdw@crl.com>  
Date: Mon, 27 Nov 1995 20:46:13 -0800 (PST)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.951127204129.24971B-100000@crl10.crl.com>  
Rendered body type: text/plain

Mark, be sure that he isn't suffering from the same simplex problem I had. My radio created a DC pulse bias on the data switching from xmit to rcv which masked the reply from the local 9600 node. The DC blocking capacitor on the input stretches this pulse. He might try changing the 10 Mf cap on the audio input to the DSP93 to a 3 Mf and check again. I have one radio port with a 3 mf and the other one with the stock 10 Mf.

This problem doesn't exist on satellite operation for me.

73, Roy

---

## 79. Re: [DSP-93:1802] Re: Gosh ?

From: Greg Jones <wd5ivd@tapr.org>  
Date: Mon, 27 Nov 1995 23:45:11 -0600 (CST)  
To: dsp-93@tapr.org  
Message-ID: <199511280545.XAA05429@sys1.tapr.org>  
Rendered body type: text/plain

No. The clousre dates means no one answers the phone. Mail continues to arrive, faxes keep being sent, e-mail is sent. If we stopped doing everything at the office -- Dorothy would never get caught up.

We probably will even being shipping kits and books during the closure. This time just allows Dorothy to have a little time off without being chined to the office.

Greg

>  
> >Anyway -- this is to announce a Spring run of the DSP-93. TAPR will be  
> >taking orders up until January 15th for a Spring (around Dayton) delivery.  
> >Please pass the word on the various channels.  
> >  
> >Hope to be able to do another run of a hundred.  
> >  
> >Cheers - Greg  
> >  
> >  
> >With the TAPR office closed from December 18 through January 15, does this  
> >mean you should change the deadline for orders to the end of January?  
> >  
> >  
> >Ron W5RKN  
> >  
> >also:  
> >rparsons@bga.com  
> >  
> >  
> >

---

## 80. Re: [DSP-93:1805] Re: yes=>Re: TNC/93 on 9600 Packet

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Tue, 28 Nov 1995 12:35:26 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511281241.HAA12168@camel.campbell.edu>  
Rendered body type: text/plain

Hi Roy, and thanks for your comments. Your experience was on my mind, and I had not yet dug thru the old mail files to find out exactly what you observed and how you fixed it.

Bob, you might want to check this out.

At 23:22 11/27/95 -0600, you wrote:  
>Mark, be sure that he isn't suffering from the same simplex problem I had.  
>My radio created a DC pulse bias on the data switching from xmit to rcv  
>which masked the reply from the local 9600 node. The DC blocking  
>capacitor on the input stretches this pulse. He might try changing the  
>10 Mf cap on the audio input to the DSP93 to a 3 Mf and check again. I  
>have one radio port with a 3 mf and the other one with the stock 10 Mf.  
>  
>This problem doesn't exist on satellite operation for me.

>  
>73, Roy  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 81. Re: [DSP-93:1805] Re: yes=>Re: TNC/93 on 9600 Packet

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 28 Nov 1995 09:07:48 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130501ace0d5b9ce08@[204.181.160.8]>  
Rendered body type: text/plain

>Mark, be sure that he isn't suffering from the same simplex problem I had.  
>My radio created a DC pulse bias on the data switching from xmit to rcv  
>which masked the reply from the local 9600 node. The DC blocking  
>capacitor on the input stretches this pulse. He might try changing the  
>10 Mf cap on the audio input to the DSP93 to a 3 Mf and check again. I  
>have one radio port with a 3 mf and the other one with the stock 10 Mf.  
>  
>This problem doesn't exist on satellite operation for me.  
>  
>73, Roy

The problem doesn't exist on satellite operation because satellite operation is full duplex. The DC pulse occurs on the FM discriminator chip output (common in many transceivers) when the transition between transmit and receive occurs.

With full duplex satellite operation, the receiver is always on and no DC level shift occurs.

Ron W5RKN

also:  
rparsons@bga.com

---

## 82. Re: [DSP-93:1806] Re: Gosh ?

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Tue, 28 Nov 1995 09:12:22 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130502ace0d699029c@[204.181.160.8]>  
Rendered body type: text/plain

>No. The clousre dates means no one answers the phone. Mail continues to  
>arrive, faxes keep being sent, e-mail is sent. If we stopped doing  
>everything at the office -- Dorothy would never get caught up.  
>  
>We probably will even being shipping kits and books during the closure.  
>This time just allows Dorothy to have a little time off without being chined  
>to the office.  
>  
>Greg

I just remember a lot of comments from people in the past that just want to talk to a human and are reluctant to leave a Visa number with a machine. Also some people are turned away by voice mail systems. Perhaps a Jan 20 date to allow time for those kind souls.

Ron W5RKN

also:  
rparsons@bga.com

---

## 83. WX Sat Wide-FM

From: jtn@te-cats.COM (John T. Nogatch)  
Date: Tue, 28 Nov 1995 07:43:40 -0800  
To: dsp-93@tapr.org  
Message-ID: <9511281543.AA23580@te-cats.COM>  
Rendered body type: text/plain



> From dsp-93@tapr.org Mon Nov 27 17:55:38 1995  
> From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
>  
> Does anybody in the group follow the NOAA WX birds? I just got an IC-706  
> and was wondering if it would receive them (it has a "wide-FM" mode) using  
> my DSP-93 and Frank's APT code.  
>  
> Anybody know which NOAA birds are active and transmitting?  
>

Polar orbiting weather satellites transmit on 136.5 and 136.62 mhz, but bandwidth seems to be a problem; they are something like 25 khz wide. The books also say that Doppler shift pushes this out to 30 khz. This is somewhat wider than a normal amateur NBFM signal. I suspect that Wide-FM mode on the IC-706 is 100 khz or more, for receiving broadcast FM in the 88 - 108 mhz band.

I learned about this the hard way. Using a Hamtronics R-137, which is "designed" for weather sat bandwidth (i.e. it has a 5 pf capacitor where the crystal filter normally goes), I still got highly distorted sound even in the middle of a pass. After rereading Taggert's handbook for the nth time, I noticed his comment that if the 3 coils in the 455 khz IF are all peaked, the bandwidth will be too narrow. Detuning the coils while listening to a satellite pass definitely reduced the noise.

I have not yet tried to use the DSP-93 for decoding the pictures. In the past I used an ADC0804 driving a UART, and recently, I have been trying to record directly into the microphone input of my Mac.

---

## 84. DSP56002EVM

From: srbible@mindport.net (Steven R. Bible)  
Date: Tue, 28 Nov 1995 22:23:46 -0500  
To: dsp-93@tapr.org  
Message-ID: <199511290323.WAA13568@polaris>  
Rendered body type: text/plain

Where is the best location to purchase the Motorola DSP56002EVM talked about in Johan's KC7WW August QEX article? I need a distributor; anyone have a favorite?

I see from the [www.motorola.com](http://www.motorola.com) web pages that the cost is ~US\$149.95.

The Motorola DSP web pages start at:

<http://design-net.com/dsp/DSPhome.html>

-----

Also, for those who are keeping track, the Harris Semiconductor pages has pdf files on their DSP development platform HSP-EVAL and HSP45116-DB.

The urls are:

<http://www.semi.harris.com/datasheets/dsp/hsp-eval/>  
<http://www.semi.harris.com/datasheets/dsp/hsp45116-db/>

Also, do a search on HSP45116 from:

<http://www.semi.harris.com/search.html>

for application and tech notes on the HSP45116-DB

73,

- Steve, N7HPR

srbible@mindport.net  
n7hpr@amsat.org  
n7hpr@tapr.org

---

## 85. pacCOMM tnc/dsp93

From: wb5aaa@wb5aaa.usl.edu (Jim Barron)  
Date: Wed, 29 Nov 95 09:54:45 cst  
To: dsp-93@tapr.org  
Message-ID: <5802@wb5aaa.usl.edu>  
Rendered body type: text/plain

can some tell me if there is a update of the firmware for the new tnc  
from PacComm for the dsp-93 ????

my firmware is Release 3.2.9.2 11/07/95.

If there is a update where can I download it ??????

I sure wish Mr. Gwyn Reedy had Informed me that the firmware  
did not support KISS... can't use this tnc without KISS

also will I have to make some mods to this board....???

My board has s/n T930020..

It has the 4 holes so the pots on the dsp-93 can be adjusted...

I can't see any cuts on any trace, ????

thanks for any help..  
de JIM

---

## 86. new PacComm TNC EPROM image posted-adds PASSTHRU, lacks KISS

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Thu, 30 Nov 1995 01:38:21 +0000  
To: dsp-93@tapr.org  
Message-ID: <199511300145.UAA28511@camel.campbell.edu>  
Rendered body type: text/plain

Hello all,

I received the following message this evening from Gwyn at PacCom. He has  
uploaded another EPROM image to the dsp93 upload subdirectory. The file is  
named tnc1125.zip.

Below, I have included his note to me...this version of the EPROM image has  
added the PASSTHRU functions, but still does not have the KISS function.

Thanks Gwyn, glad you are working on it.

>Mark,  
>I uploaded new code dated 11/25 to the TAPR dsp93 upload section.  
>I will post documentation about it in themorning - at the moment the machine  
>with the docs is doing a tape backup and I can't access it.  
>It has the DSP Load (passthru) function, but not KISS yet. Soon (we all hope)  
>Gwyn  
>  
>\_ \_ \_ \_ \_ W1BEL \_ \_ \_ \_ \_ gwyn@paccomm.com \_ \_ \_ \_ \_ W1BEL@amsat.org \_ \_ \_ \_ \_  
>Gwyn Reedy, W1BEL  
>

Mark L. Hammond [KC4EBR]

---

# December 1995

Original source file: dsp.9512

Source: [http://ftp.tapr.org/tapr\\_history/SIG\\_Archives/dspsig/mail\\_archive/dsp.9512](http://ftp.tapr.org/tapr_history/SIG_Archives/dspsig/mail_archive/dsp.9512)

## 1. Re: [DSP-93:1811] DSP56002EVM

From: "Jim Lynch" <k4gvo@america.net>  
Date: Fri, 1 Dec 1995 05:29:54 +0000  
To: srbible@mindport.net (Steven R. Bible), dsp-93@tapr.org  
Message-ID: <199512011039.KAA12905@america.net>  
Rendered body type: text/plain

> Date: Wed, 29 Nov 1995 11:31:18 -0600 (CST)  
> Reply-to: dsp-93@tapr.org  
> From: srbible@mindport.net (Steven R. Bible)  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:1811] DSP56002EVM

> Where is the best location to purchase the Motorola DSP56002EVM talked about  
> in Johan's KC7WW August QEX article? I need a distributor; anyone have a  
> favorite?

> Call 800-845-6686 with a credit card. They will take your order.  
> I see from the [www.motorola.com](http://www.motorola.com) web pages that the cost is ~US\$149.95.

> The Motorola DSP web pages start at:  
> <http://design-net.com/dsp/DSPhome.html>

> -----  
> Also, for those who are keeping track, the Harris Semiconductor pages has  
> pdf files on their DSP development platform HSP-EVAL and HSP45116-DB.

> The urls are:  
> <http://www.semi.harris.com/datasheets/dsp/hsp-eval/>  
> <http://www.semi.harris.com/datasheets/dsp/hsp45116-db/>

> Also, do a search on HSP45116 from:  
> <http://www.semi.harris.com/search.html>  
> for application and tech notes on the HSP45116-DB

> 73,  
> - Steve, N7HPR

> srbible@mindport.net  
> n7hpr@amsat.org  
> n7hpr@tapr.org

Jim Lynch                      Fayetteville, GA              K4GVO  
'86 GL1200I                      k4gvo@america.net              44.36.34.20

## 2. No luck with PacComm PASSTHRU

From: ssalek@h-e.com  
Date: Fri, 1 Dec 95 10:02:49 PDT  
To: dsp-93@tapr.org  
Message-ID: <00000148.sm@h-e.com>  
Rendered body type: text/plain

Hello Gwyn and all,

Well I downloaded the 11/25 firmware for the PacComm DSP-93 TNC and I  
burned/installed the EPROM. After doing a cold reset, I was unable to get the  
PASSTHRU mode to work.

It appears the main problem is that the software does not respond to the "w"  
command from within the BAUD selection routine. That command should set the  
"DSP Serial" port to 19.2k baud, but it does nothing. The "v" command appears  
to work, but that sets the port to 9600 baud, and the DSP-93 NEEDS 19.2k baud.  
In fact, I see no practical use for any baud selection below 19.2k for the DSP  
Serial port.

Even with that problem, I decided to connect the PASSTHRU cable to the DSP-93 to see if I could get any indication that the port is doing anything (like seeing some "trash" characters during a DSP-93 manual reset). This exercise yielded no results. The PASSTHRU command itself appears to work, and you can get in and out of it with the sequence specified in the instructions, but I could get no indication that it was actually functioning.

Otherwise, the firmware appears to work like the 11/7 release. Any suggestions from Gwyn or others who have implemented the 11/25 firmware would be appreciated.

One additional question for Gwyn: During the TNC boot-up process, the sign-on banner mentions "clock chip support." Can this TNC support a clock chip, or is that just an extraneous message that should be deleted? It would be nice to not to have to manually do a DA command at every power-up.

73,

Stan  
KD6CVL  
Sonoma, CA

---

### 3. Re: [DSP-93:1815] No luck with PacComm PASSTHRU

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 1 Dec 1995 13:37:47 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130501ace508c96b01@[204.181.160.94]>  
Rendered body type: text/plain

>Hello Gwyn and all,  
>

...

>In fact, I see no practical use for any baud selection below 19.2k for the DSP  
>Serial port.

Stan and all,

I wouldn't rule out passthru rates other than 19.2. For example, the P3C software uses DSP-93 output at 1200 baud:

```
" p3c93t1.obj radio port 1, ground to tune
 p3c93t2.obj radio port 2, ground to tune
```

NOTE: DATA IS OUTPUT FROM THE DSP-93 UART. YOU DON'T USE THE TNC WITH THIS PROGRAM. Data is output at 1200 bps, and DCD handshaking is implemented as needed by P3C.EXE."

In fact this program is probably a good test bed for data (not commands) from the DSP-93 that uses the PASSTHRU command.

Ron W5RKN

also:  
rparsons@bga.com

---

### 4. [Fwd: Re: [DSP-93:1815] No luck with PacComm PASSTHRU]

From: Dave Lamont <dlamont@central.co.nz>  
Date: Fri, 01 Dec 1995 22:54:43 +0000  
To: dsp-93@tapr.org  
Message-ID: <30BF87B3.2828@central.co.nz>  
Rendered body type: text/plain

ssalek@h-e.com wrote:

>

> Hello Gwyn and all,

>

> Well I downloaded the 11/25 firmware for the PacComm DSP-93 TNC and I  
> burned/installed the EPROM. After doing a cold reset, I was unable to get the  
> PASSTHRU mode to work. I also confirm the above.  
> It appears the main problem is that the software does not respond to the "w"  
> command from within the BAUD selection routine. That command should set the  
> "DSP Serial" port to 19.2k baud, but it does nothing. The "v" command appears  
> to work, but that sets the port to 9600 baud, and the DSP-93 NEEDS 19.2k baud.

I advised Paccom of the "W" fault two days after release of Nov 7th eprom release.

> In fact, I see no practical use for any baud selection below 19.2k for the DSP> Serial port.

> Even with that problem, I decided to connect the PASSTHRU cable to the DSP-93 to  
> see if I could get any indication that the port is doing anything (like seeing  
> some "trash" characters during a DSP-93 manual reset). This exercise yielded no  
> results.

Agreed

>

The PASSTHRU command itself appears to work, and you can get in and  
> out of it with the sequence specified in the instructions, but I could get no  
> indication that it was actually functioning.  
> Setting ALL the ports to 9600 and amending the DSPLOAD.CFG to  
9600 yielded negative results. {a breakout box indicated that  
date was being transferred to the TNC port when DSPLOAD FSK93U1  
was issued.

BTW until a DSP93 obj is loaded the Paccom TNC for DSP93 DCD LED  
is lit at all times. Setting the TNC to full duplex to overcome this  
made no difference.

> Otherwise, the firmware appears to work like the 11/7 release. Any suggestions  
> from Gwyn or others who have implemented the 11/25 firmware would be  
> appreciated.  
>  
> One additional question for Gwyn: During the TNC boot-up process, the sign-on  
> banner mentions "clock chip support." Can this TNC support a clock chip, or is  
> that just an extraneous message that should be deleted? It would be nice to not  
> to have to manually do a DA command at every power-up.  
>  
> 73,  
>  
> Stan  
> KD6CVL  
> Sonoma, CA

---

## 5. Re: [DSP-93:1816] Re: No luck with PacComm PASSTHRU

From: ssalek@h-e.com  
Date: Fri, 1 Dec 95 15:42:32 PDT  
To: dsp-93@tapr.org  
Message-ID: <0000014B.sm@h-e.com>  
Rendered body type: text/plain

Hi Ron and others--

>>In fact, I see no practical use for any baud selection below 19.2k for the DSP  
>>Serial port.

>Stan and all,  
>I wouldn't rule out passthru rates other than 19.2. For example, the P3C  
>software uses DSP-93 output at 1200 baud...

Thanks, Ron, I stand corrected on this issue. I do think, however, that the DSP  
port should at least default to 19.2k, which is required to get started with  
DSP-93 serial communications. Right now, the 11/25 firmware won't allow a 19.2k  
selection at all.

>In fact this program is probably a good test bed for data (not commands)  
>from the DSP-93 that uses the PASSTHRU command.

Good idea, I'll try it when PASSTHRU is working.

73,

Stan  
KD6CVL

---

## 6. question

From: Brian Mullaney <mullaneb@mccc.edu>  
Date: Fri, 1 Dec 1995 19:52:40 -0500 (EST)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SV4.3.91.951201195013.14859A-100000@tecoma>  
Rendered body type: text/plain

How is work on the tnc-95 going (Keeping in the 'tnc for dsp-93' spirit) ;-)

Brian

Brian Mullaney | NRA N-SSA | bmullane@pluto.njcc.com  
KB2TIS | ARRL TAPR | mullaneb@tecoma.mccc.edu

---

## 7. Re: [DSP-93:1816] Re: No luck with PacComm PASSTHRU

From: Dave Lamont <diamont@central.co.nz>  
Date: Sat, 02 Dec 1995 02:01:25 +0000  
To: dsp-93@tapr.org  
Message-ID: <308FB375.1D65@central.co.nz>  
Rendered body type: text/plain

Ronald G. Parsons wrote:

>  
> >Hello Gwyn and all,  
> >  
> ..  
> >In fact, I see no practical use for any baud selection below 19.2k for the DSP  
> >Serial port.  
>  
> Stan and all,  
>  
> I wouldn't rule out passthru rates other than 19.2. For example, the P3C  
> software uses DSP-93 output at 1200 baud:  
>  
> " p3c93t1.obj radio port 1, ground to tune  
> p3c93t2.obj radio port 2, ground to tune  
>  
> NOTE: DATA IS OUTPUT FROM THE DSP-93 UART. YOU DON'T USE THE TNC  
> WITH THIS PROGRAM. Data is output at 1200 bps, and DCD handshaking  
> is implemented as needed by P3C.EXE."  
>  
> In fact this program is probably a good test bed for data (not commands)  
> from the DSP-93 that uses the PASSTHRU command.  
>  
> Ron W5RKN  
>  
> also:  
> rparsons@bga.comRon

Before I start investigating this passthru dilemma can  
you tell me if the DSP93 will work on a three wire system.

When the Rs232 level changer is removed and the TNC header plugged  
in all the handshaking disappears and in fact is left open cct.  
73

dave

---

## 8. Re: [DSP-93:1820] Re: No luck with PacComm PASSTHRU

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Fri, 1 Dec 1995 21:20:10 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500ace5753e06ad@[204.181.160.80]>  
Rendered body type: text/plain

>Before I start investigating this passthru dilemma can  
>you tell me if the DSP93 will work on a three wire system.  
>  
>When the Rs232 level changer is removed and the TNC header plugged  
>in all the handshaking disappears and in fact is left open cct.  
>73  
>  
>dave

Three wire connection will not work, but I believe that if you assert RTS  
at the input to the DSP-93 (corresponds to pin 7 on the DB-9, pins 6 and 11  
on U211), it will work.

Give it a try. U211-11 must be low.

Ron W5RKN

also:  
rparsons@bga.com

## 9. Re: [DSP-93:1821] Re: No luck with PacComm PASSTHRU

From: ssalek@h-e.com  
Date: Mon, 4 Dec 95 09:30:28 PDT  
To: dsp-93@tapr.org  
Message-ID: <0000014E.sm@h-e.com>  
Rendered body type: text/plain

Hi Ron, Dave L., and others-

>Three wire connection will not work, but I believe that if you assert RTS  
>at the input to the DSP-93 (corresponds to pin 7 on the DB-9, pins 6 and 11  
>on U211), it will work.

>Give it a try. U211-11 must be low.

Good point guys! I forgot about this necessity since the time I made a cable for my Mac. It looks like the PacComm header plug will need soldered jumpers to correct this problem.

Gwyn-->take note. We also need EPROM corrections to fix the 19.2k selection for the DSP port in the BAUD menu. I don't see a work-around for this.

73,

Stan  
KD6CVL

---

## 10. The Heart of the TS-870S

From: srbible@mindport.net (Steven R. Bible)  
Date: Mon, 4 Dec 1995 16:03:13 -0500  
To: dsp-93@tapr.org  
Message-ID: <199512042103.QAA14446@polaris>  
Rendered body type: text/plain

I was reading the December "73 Magazine." There is a review on the Kenwood TS-870S. There is a picture of the main board on page 44. On it are two (count them -- 2) DSP56002 chips!! Holly cow! There are wired into the IF of the radio.

If you have not heard this rig, get a demo. Kenwood has a video tape that is excellent in describing the capabilities of the unit. I am sure Kenwood would send the tape free of charge to clubs if they ask. I believe that's how our club did it.

Fancy unit, and expensive too. ~ US \$2800.00 street price (3100.00 list).

73,

- Steve, N7HPR

srbible@mindport.net  
n7hpr@amsat.org  
n7hpr@tapr.org

---

## 11. Re: [DSP-93:1823] The Heart of the TS-870S

From: Tim Baggett <tim@NMSU.Edu>  
Date: Mon, 4 Dec 1995 16:27:13 -0700 (MST)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.951204162326.4139B-100000@wilma>  
Rendered body type: text/plain

On Mon, 4 Dec 1995, Steven R. Bible wrote:

> I was reading the December "73 Magazine." There is a review on the Kenwood  
> TS-870S. There is a picture of the main board on page 44. On it are two  
> (count them -- 2) DSP56002 chips!! Holly cow! There are wired into the IF  
> of the radio.

I heard only a little bit about this radio, but I'm quite interested in learning more about it. I find myself quite confused when it comes to actually wiring the DSP processors into the IF. What freq is the IF? How fast of A/D is used to sample the IF? I'm just a little curious as to how they use a DSP processor at this frequency range!

I'm quite certain the 56002 is integer based as well (the 56000/56001 are).

VERY INTERESTING! Wonder how it works during Field Day? RTTY? New item for the list to be sent to Santa.

73  
Tim, AA5DF

New Mexico State University, Las Cruces, NM  
Internet: tim@nmsu.edu  
AMPRnet: aa5df@armstrong.ampr.org

---

## 12. DSP-93

From: William Richarz <wricharz@ix.netcom.com>  
Date: Sat, 09 Dec 1995 21:50:43 -0500  
To: dsp-93@tapr.org  
Message-ID: <199512100252.SAA26051@ix8.ix.netcom.com>  
Rendered body type: text/plain

Think I'm in this SIG, but have not seen any messages...is anybody out there?  
Bill Richarz <WA4VAF>  
wricharz@ix.netcom.com

---

## 13. Re: [DSP-93:1825] DSP-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sat, 9 Dec 1995 21:27:48 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500acf00416e904@[204.181.160.2]>  
Rendered body type: text/plain

>Think I'm in this SIG, but have not seen any messages...is anybody out  
>there?  
>Bill Richarz <WA4VAF>  
>wricharz@ix.netcom.com

It's just been slow lately.

Ron W5RKN

also:  
rparsons@bga.com

---

## 14. Re: [DSP-93:1825] DSP-93

From: "Ralph Ward" <rw@TXCC.NET>  
Date: Sat, 9 Dec 1995 21:55:13 -0600  
To: dsp-93@tapr.org, dsp-93@tapr.org  
Message-ID: <199512100354.VAA19906@txcc.net>  
Rendered body type: text/plain

I am Here! Too!  
rw@txcc.net  
Ralph Ward Kb5UAA

> Date: Sat, 9 Dec 1995 20:57:04 -0600 (CST)  
> Reply-to: dsp-93@tapr.org  
> From: William Richarz <wricharz@ix.netcom.com>  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:1825] DSP-93

> Think I'm in this SIG, but have not seen any messages...is anybody out  
> there?  
> Bill Richarz <WA4VAF>  
> wricharz@ix.netcom.com  
>  
>  
> rw@txcc.net rward@procorp.com

---

## 15. Re: [DSP-93:1826] Re: DSP-93

From: William Richarz <wricharz@ix.netcom.com>  
Date: Sat, 09 Dec 1995 23:20:36 -0500  
To: dsp-93@tapr.org  
Message-ID: <199512100422.UAA08749@ix2.ix.netcom.com>  
Rendered body type: text/plain

At 09:35 PM 12/9/95 -0600, you wrote:  
>>Think I'm in this SIG, but have not seen any messages...is anybody out  
>>there?  
>>Bill Richarz <WA4VAF>



>>wricharz@ix.netcom.com  
>  
>  
>It's just been slow lately.  
>  
>  
>Ron W5RKN  
>  
>also:  
>rparsons@bga.com

Ok Ron, thanks for the reply...I wanted to be sure someone was out there  
if I had questions, guess the DSP-93 works pretty good. I am trying to decide  
if I want to get the kit or not.  
Bill Richarz <WA4VAF>  
wricharz@ix.netcom.com

---

## 16. Re: [DSP-93:1828] Re: DSP-93

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Sun, 10 Dec 1995 08:02:39 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500acf09758803c@[204.181.160.89]>  
Rendered body type: text/plain

>At 09:35 PM 12/9/95 -0600, you wrote:  
>>>Think I'm in this SIG, but have not seen any messages...is anybody out  
>>>there?  
>>>Bill Richarz <WA4VAF>  
>>>wricharz@ix.netcom.com  
>>  
>>  
>>It's just been slow lately.  
>>  
>>  
>>Ron W5RKN  
>>  
>>also:  
>>rparsons@bga.com  
>  
>Ok Ron, thanks for the reply...I wanted to be sure someone was out there  
>if I had questions, guess the DSP-93 works pretty good. I am trying to decide  
>if I want to get the kit or not.  
>Bill Richarz <WA4VAF>  
>wricharz@ix.netcom.com

Don't forget the deadline for the next batch of orders is mid-January.

Don't be left out. You wouldn't want to be the only one on your block  
without one would you?

Ron W5RKN

also:  
rparsons@bga.com

---

## 17. RE: [DSP-93:1807] Re: yes=>Re: TNC/93 on 9600 Packet

From: "Bob Smith" <bsmith@msn.com>  
Date: Mon, 11 Dec 95 03:14:26 UT  
To: "dsp-93@tapr.org"@msn.com, "Mark L. Hammond" <hammond@camel.campbell.edu>  
Message-ID: <UPMAIL01.199512110321550832@msn.com>  
Rendered body type: text/plain

Sorry, been out - I do get solid DCD lights on recvd data - does this make a  
difference?

-----  
From: dsp-93@tapr.org on behalf of Mark L. Hammond  
Sent: Tuesday, November 28, 1995 7:39 AM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1807] Re: yes=>Re: TNC/93 on 9600 Packet

Hi Roy, and thanks for your comments. Your experience was on my mind, and I  
had not yet dug thru the old mail files to find out exactly what you  
observed and how you fixed it.

Bob, you might want to check this out.

At 23:22 11/27/95 -0600, you wrote:  
>Mark, be sure that he isn't suffering from the same simplex problem I had.  
>My radio created a DC pulse bias on the data switching from xmit to rcv  
>which masked the reply from the local 9600 node. The DC blocking  
>capacitor on the input stretches this pulse. He might try changing the  
>10 Mf cap on the audio input to the DSP93 to a 3 Mf and check again. I  
>have one radio port with a 3 mf and the other one with the stock 10 Mf.  
>  
>This problem doesn't exist on satellite operation for me.  
>  
>73, Roy  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 18. Re: [DSP-93:1830] Re: yes=>Re: TNC/93 on 9600 Packet

From: Roy Welch <rdw@crl.com>  
Date: Sun, 10 Dec 1995 20:06:31 -0800 (PST)  
To: dsp-93@tapr.org  
Message-ID: <Pine.SUN.3.91.951210200436.16080B-100000@crl12.crl.com>  
Rendered body type: text/plain

No the solid DCD light will not show up the pulse bias. You have to look at the audio input to the DSP93 with a scope to see the shift caused by the pulse. However changing out the 10Mf input cap in the DSP93 to a 2Mf will cure the problem if that is the problem.

On Sun, 10 Dec 1995, Bob Smith wrote:

> Sorry, been out - I do get solid DCD lights on recvd data - does this make a  
> difference?  
>  
> -----  
> From: dsp-93@tapr.org on behalf of Mark L. Hammond  
> Sent: Tuesday, November 28, 1995 7:39 AM  
> To: dsp-93@tapr.org  
> Subject: [DSP-93:1807] Re: yes=>Re: TNC/93 on 9600 Packet  
>  
> Hi Roy, and thanks for your comments. Your experience was on my mind, and I  
> had not yet dug thru the old mail files to find out exactly what you  
> observed and how you fixed it.  
>  
> Bob, you might want to check this out.  
>  
> At 23:22 11/27/95 -0600, you wrote:  
> >Mark, be sure that he isn't suffering from the same simplex problem I had.  
> >My radio created a DC pulse bias on the data switching from xmit to rcv  
> >which masked the reply from the local 9600 node. The DC blocking  
> >capacitor on the input stretches this pulse. He might try changing the  
> >10 Mf cap on the audio input to the DSP93 to a 3 Mf and check again. I  
> >have one radio port with a 3 mf and the other one with the stock 10 Mf.  
> >  
> >This problem doesn't exist on satellite operation for me.  
> >  
> >73, Roy  
> >  
> >  
> >  
> >  
> >  
> Mark L. Hammond [KC4EBR]  
>  
>  
>

---

## 19. Current DSP-93 software list-12/11/95

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Mon, 11 Dec 1995 23:40:12 +0000  
To: dsp-93@tapr.org  
Cc: dsp93dev@tapr.org  
Message-ID: <199512112352.SAA27400@camel.campbell.edu>  
Rendered body type: text/plain

Hello All,

Below is my version of the current software list of code available for the

TAPR/AMSAT DSP-93. If anyone has corrections, additions, or deletions, please let me know.

In addition, I have put a file called update1.zip on the ftp.tapr.org anonymous ftp site under the directory tapr/dsp93/diskettes.

This \*should\* bring anybody who got the June 5, 1995 diskettes (or diskette images from the ftp site) up to speed. Nothing is really new in the past few months--I have just stuck the individual updated/new code into one zip file for easy downloading.

=====

DSP-93 Software, December 95

#### 9600 bps Modems

|                        |                                                            |                   |
|------------------------|------------------------------------------------------------|-------------------|
| FSK93U1/2              | Half or full duplex operation, active DCD                  | WB5IPM/W5RKN/W0SL |
| FSK93U1/2B             | Weak signal optimized FSK93U1/2                            | WB5IPM/W5RKN/W0SL |
| FSK93K1/2              | ISI comp. for KO-23/25, active DCD                         | WB5IPM/W5RKN/W0SL |
| FSKADP1/2              | Like FSK93U1/2, but automatically adapts to the radio port |                   |
| initialization jumpers | WB5IPM/W5RKN/W0SL                                          |                   |
| TPRS931/2              | TPRS with NRZI in/out, active DCD                          | WB5IPM            |

#### 1200 bps Modems

|                        |                                                           |        |
|------------------------|-----------------------------------------------------------|--------|
| PKT931/2               | Standard AFSK, active DCD                                 | WB5IPM |
| PKTADP1/2              | Like PKT931/2, but automatically adapts to the radio port |        |
| initialization jumpers | WB5IPM/W5RKN/W0SL                                         |        |
| PSK93R1/2J             | Satellite PSK, active DCD, SmartTune                      | WB5IPM |
| PSK93R1/2Y             | Sat. PSK, active DCD, SmartTune, YAESU                    | WB5IPM |
| PSK93R1/2K             | Sat. PSK, active DCD, SmartTune, ICOM/Kenwood rigs        | WB5IPM |
| PSK93R1/2L             | Sat. PSK, for weak signal work, ICOM Kenwood rigs         | WB5IPM |
| PSK93R1/2Z             | Sat. PSK, Yeasu rigs, ground-to-tune                      | WB5IPM |
| PSK93R1/2W             | Sat. PSK, Yeasu rigs, ground-to-tune, weak signals        | WB5IPM |
| PSK93X1/2A             | Sat. PSK, Yeasu rigs, 5V-to-tune                          | WB5IPM |
| PSK93X1/2B             | Sat. PSK, Yeasu rigs, 5V-to-tune, weak signals            | WB5IPM |

#### HF Modems

|            |                                                                    |        |
|------------|--------------------------------------------------------------------|--------|
| HOT_HF93   | RTTY/SITOR Mode B (FEC) modem, Viterbi soft detection              | W3HCF  |
|            | Many features; bauds to 100, various shifts, etc. See hot_hf.doc   |        |
| HF_93HT1/2 | 300 bps FSK, active DCD, adpt. threshold                           | WB5IPM |
| HF_93U1/2  | AMTOR using TOR.EXE, adpt. threshold                               | WB5IPM |
|            | Requires the use of the shareware program TOR.EXE to encode/decode |        |

#### AMTOR

#### Satellite APT Pictures

|            |                                            |        |
|------------|--------------------------------------------|--------|
| APT93R1/2W | Carrier-sync. pixels eliminate doppler bow | WB5IPM |
| APT93R1/2A | visible light sync version                 | WB5IPM |

#### Satellite Telemetry

|           |                                                        |        |
|-----------|--------------------------------------------------------|--------|
| P3C93T1/2 | A0-13 400 bps telemetry, P3C.EXE comp.                 | WB5IPM |
|           | Requires the use of P3C.EXE program by W8GUS to decode |        |
| U093T1/2  | U0-11 1200 bps telemetry decoder                       | WB5IPM |

#### Noise Processing

|                  |                                              |                  |
|------------------|----------------------------------------------|------------------|
| W9GR_93          | Adpt. carrier null, channel enh., BP filters | N4IIR/K9GKC/W9GR |
| CW93_D CW filter |                                              | WB5IPM           |

#### Instrumentation

|              |                                             |                     |
|--------------|---------------------------------------------|---------------------|
| D93WE series | Loader, audio o'scope and spectrum analyz'r | N5EG(PC)/W5RKN(Mac) |
|--------------|---------------------------------------------|---------------------|

#### Diagnostics

|              |                                       |                   |
|--------------|---------------------------------------|-------------------|
| Monitor      | Basic DSP-93 Monitor and SW utilities | N5BRG             |
| DSP-93 tests | Check-out of all DSP-93 functions     | WB5PKJ/N5EG/W5RKN |

=====

Mark L. Hammond [KC4EBR]

## 20. Re: [DSP-93:1832] Current DSP-93 software list-12/11/95

From: fperkins@onramp.net  
Date: Mon, 11 Dec 1995 20:13:10 -0600  
To: dsp-93@tapr.org  
Message-ID: <1995121120213.UAA10401@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Mark,

Well, there is another. Thanks to Ron for confirming operation.  
At Ron's suggestion, I think we'll release it mid-Spring around the  
time the next batch of kits are on-line. Hint - its not a modem.

The saga continues...

73 Frank WB5IPM

---

## 21. Help needed on Kantronics data engine

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 13 Dec 1995 09:44:36 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130501acf4a0472033@[204.181.160.11]>  
Rendered body type: text/plain

Can someone help Alfonso. Reply to me or the group and I'll send the reply  
back via K0-23. Thanks.

Ron

From: LU7PB  
To: W5RKN  
Subject: DSP-93+DATA ENGINE  
Keywords:

-----  
To : W5RKN  
From: LU7PB  
Time: 232213UTC  
Date: 12 Dec 1995  
-----

Hola! Ron,  
I'M TRYING TO USE A KANTRONICS DATA ENGINE WITH A "DATA ENGINE JUMPER  
BOARD" ON THE MODEM DISCONNECT HEADERS PORT 1,WITH A TAPR/AMSAT DSP-93.

ACTUALLY THE DSP-93 IS WORKING IN THE RIGTH WAY WITH A TNC MADE BY PACCOMM  
SIMILAR THE TNC-2.YOU NOW THIS TNC. I TEST IN 1200 BPS PACKET ONLY.  
THE WIRING BETWEEN PORT 1 OF THE DATA ENGINE AND THE DSP-93 IS LIKE THE  
FOLLOWING TABLE:

| PIN DB25   | DSP-93 INTERFACE | PIN DB15 | PORT 1 DATA ENGINE |
|------------|------------------|----------|--------------------|
| 1 DCD      | -----            | 7        |                    |
| 3 PTT      | -----            | 5        |                    |
| 8 GND      | -----            | 11       |                    |
| 9 RX DATA  | -----            | 2        |                    |
| 10 TX DATA | -----            | 1        |                    |

IN "TYPE A" SETTING WORK OK ONLY IN RECEPTION. IN "TYPE B" AND "TYPE C"  
WORK OK ONLY IN TRANSMISSION IN RECEPTION NOT WORK. "TYPE A,B AND C" ARE  
THE TYPE OF MODEM SETTING BY KANTRONICS IN THE JUMPER BOARD MODEM  
DISCONNECT.

IF I PUT THE JUMPER JP3 OF THE JUMPER BOARD I HAVE THE TRANSMIT CLOCK OF  
THE DATA ENGINE IN THE DB15 PORT 1 PIN 3 OF THE DATA ENGINE AND IF I JOINT  
DE PIN 3 WITH THE PIN 4 OF THE DATA ENGINE DB15 I LOOP BACK TX CLOCK TO RX  
CLOCK, I BELIEVE THAT DSP-95 PROVIDE NO RX CLOCK, SO WE USE THE DATA  
ENGINES CLOCK... NOW THE SYSTEM WORK IN PKT 1200 BUT NOT VERY GOOD. WHEN I  
LISTEN A STATION SENDING CONTINUOUSLY UNPROTO CQ IN THE DSP-95+DE I RECEIVE  
INTERMITEN, ONE MOMENT OK AND OTHER MOMENTO NOT.

DEAR RON: THE PACCOMM TNC FOR THE MODEM TAPR/AMSAT DSP-95, HAVE A INTERIM  
EPROM. I SEND TO PACCOMM A FAX (THE 03/DEC/95) FOR THE FULLY CAPABLE EPROM  
BUT AT THE MOMENT I NOT HAVE NOTICE. WITH THIS TNC THE DSP-93 WORK VERY  
FINE IN PACKET 1200 T/R BUT I NEED WORK SATELLITE IN PSK AND DFSK 9600  
WITH THE WISP.

THANKS FOR READ THIS MSG AND IF POSSIBLE I GET YOUR HELP I'M VERY HAPPY.  
EXCUSE MY ENGLISH, WHEN YOU WRITE I UNDERSTAND ALL.  
THE BEST TO YOU RON AND VERY MERRY CHRISTMAS TO YOU AND YOURS.

73 de Alfonso en San Juan, Argentina  
AMSAT-ARG, AMSAT-NA LM-1116,  
LU7PB @ UO-22, K0-23, K0-25  
Internet: alba@starnet.net.ar

Ron W5RKN

also:  
rparsons@bga.com

---

## 22. FSK modems

From: dmedley@ix.netcom.com (David J. Medley )  
Date: Wed, 13 Dec 1995 08:42:48 -0800  
To: DSP-93@tapr.org  
Message-ID: <199512131642.IAA11345@ix6.ix.netcom.com>  
Rendered body type: text/plain

I am having a problem with K0-23 in that the efficiency of downloading is much much worse than with my TNC-2/G3RUH combo. The fact that the latter works so well eliminates the possibility of a radio fault I believe. The only thing I have left to try seems to be the gain setting in the modem software but I have been frustated in this because I cannot find the source code for FSK93K1, the modem I am using. I have played endlessly with the gain pot on the DSP board but the highest download efficiency I have seen is 42%. The LED 6 only stays firmly on for short periods and then only when the incoming signals are strongest, otherwise there is continual flashing between LED 5 and 6. I would appreciate any help/suggestions and particularly the source code for FSK93K1.  
Thanks de Dave

---

## 23. Re: [DSP-93:1835] FSK modems

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 13 Dec 1995 17:35:24 +0000  
To: dsp-93@tapr.org  
Message-ID: <199512131748.MAA25606@camel.campbell.edu>  
Rendered body type: text/plain

Hi David,

Unfortunately, the FSK source code has not been released. This is to try and make the unit marketable for OEM manufacturing, etc. in the usual TAPR spirit.

The TPRS source (tpsr.asm, a 9600 bps FSK modem) has been released. This might help...

I will ask Ron, W5RKN to assemble versions of FSK93K1 with the maximum gain setting of "6". At least that will get "more signal" to the DSP-93. I will let you know when they are ready and where to find them. I hope this will suffice.

What rig are you using for 9600 satellite work?

At 10:53 12/13/95 -0600, you wrote:

>I am having a problem with K0-23 in that the efficiency of downloading  
>is much much worse than with my TNC-2/G3RUH combo. The fact that the  
>latter works so well eliminates the possibility of a radio fault I  
>believe. The only thing I have left to try seems to be the gain setting  
>in the modem software but I have been frustated in this because I  
>cannot find the source code for FSK93K1, the modem I am using. I have  
>played endlessly with the gain pot on the DSP board but the highest  
>download efficiency I have seen is 42%. The LED 6 only stays firmly on  
>for short periods and then only when the incoming signals are  
>strongest, otherwise there is continual flashing between LED 5 and 6.  
>I would appreciate any help/suggestions and particularly the source  
>code for FSK93K1.  
>Thanks de Dave  
>  
>  
>

Mark L. Hammond [KC4EBR]

---

## 24. Re: [DSP-93:1835] FSK modems

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 13 Dec 1995 11:53:53 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130502acf4c3455936@[204.181.160.79]>  
Rendered body type: text/plain

>I am having a problem with K0-23 in that the efficiency of downloading  
>is much much worse than with my TNC-2/G3RUH combo. The fact that the

>latter works so well eliminates the possibility of a radio fault I  
>believe. The only thing I have left to try seems to be the gain setting  
>in the modem software but I have been frustated in this because I  
>cannot find the source code for FSK93K1, the modem I am using. I have  
>played endlessly with the gain pot on the DSP board but the highest  
>download efficiency I have seen is 42%. The LED 6 only stays firmly on  
>for short periods and then only when the incoming signals are  
>strongest, otherwise there is continual flashing between LED 5 and 6.  
>I would appreciate any help/suggestions and particularly the source  
>code for FSK93K1.  
>Thanks de Dave

If you have a scope, make sure the signal at TP1 is a little less than 1 V  
p-p. Overdriving is much worse than underdriving.

TAPR has not released the source for the FSK modems.

Ron W5RKN

also:  
rparsons@bga.com

---

## 25. Re: FSK modems- correction

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 13 Dec 1995 19:18:24 +0000  
To: dsp-93@tapr.org  
Message-ID: <199512131931.0AA28828@camel.campbell.edu>  
Rendered body type: text/plain

Oh, I stand corrected in the manner in which we are supposed to create  
various modems with various gain settings. Thanks to Ron for reminding me  
that the details on how to edit the xxx.OBJ files to change the the gain  
settings. You should look below:

See : "Changing Gain settings on FSK modems" on page 9 of the Operations  
Manual. (latest version available on the WWW at [www.tapr.org](http://www.tapr.org))

This describes which lines to change, and the results of the changes in the  
gain of the modems.

Thanks, Ron.

At 11:57 12/13/95 -0600, you wrote:  
>>I am having a problem with KO-23 in that the efficiency of downloading  
>>is much much worse than with my TNC-2/G3RUH combo. The fact that the

Mark L. Hammond [KC4EBR]

---

## 26. Re: [DSP-93:1836] Re: FSK modems

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 13 Dec 1995 13:39:40 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130502acf4dc263175@[204.181.160.10]>  
Rendered body type: text/plain

>Hi David,  
>...  
>  
>I will ask Ron, W5RKN to assemble versions of FSK93K1 with the maximum gain  
>setting of "6". At least that will get "more signal" to the DSP-93. I will  
>let you know when they are ready and where to find them. I hope this will  
>suffice.  
>

See "Changing Gain settings on FSK modems" on page 9 of the Operations Manual.

Ron W5RKN

also:  
rparsons@bga.com

---

## 27. Webersat

From: dmedley@ix.netcom.com (David J. Medley )  
Date: Wed, 13 Dec 1995 11:52:49 -0800

To: dsp-93@tapr.org  
Message-ID: <199512131952.LAA11634@ix9.ix.netcom.com>  
Rendered body type: text/plain

Has anyone tried to use the DSP-93 with Webersat? I tried it this morning with completely negative results. I used the same modem as I use with A0-16.  
73 de Dave KI6QE

---

## 28. Re: [DSP-93:1836] Re: FSK modems

From: dmedley@ix.netcom.com (David J. Medley )  
Date: Wed, 13 Dec 1995 11:59:47 -0800  
To: dsp-93@tapr.org  
Message-ID: <199512131959.LAA00164@ix4.ix.netcom.com>  
Rendered body type: text/plain

You wrote:  
>  
>I will ask Ron, W5RKN to assemble versions of FSK93K1 with the maximum gain  
>setting of "6". At least that will get "more signal" to the DSP-93.  
I will  
>let you know when they are ready and where to find them. I hope this will  
>suffice.  
>  
>What rig are you using for 9600 satellite work?  
Mark I am using an FT-736. This is the same rig I used with the satellite gateway for many years. It has all the relevant mods.  
Yes if Ron could assemble a max gain modem that would help I am sure.  
Thanks for your help.  
73 de Dave KI6QE

---

## 29. Re: [DSP-93:1837] Re: FSK modems

From: dmedley@ix.netcom.com (David J. Medley )  
Date: Wed, 13 Dec 1995 12:03:39 -0800  
To: dsp-93@tapr.org  
Message-ID: <199512132003.MAA13770@ix9.ix.netcom.com>  
Rendered body type: text/plain

You wrote:  
>  
>If you have a scope, make sure the signal at TP1 is a little less than 1 V  
>p-p. Overdriving is much worse than underdriving.  
>  
>TAPR has not released the source for the FSK modems.  
Yes I have checked that Ron. I understand about the source code. Mark is going to ask you to assemble a version of the modem for me with maximum gain. I would appreciate that.  
>  
73 de Dave  
  
>  
>also:  
>rparsons@bga.com  
>  
>  
>

---

## 30. Another PacComm firmware revision posted (?)

From: ssalek@h-e.com  
Date: Wed, 13 Dec 95 12:55:03 PDT  
To: dsp-93@tapr.org  
Message-ID: <0000016B.sm@h-e.com>  
Rendered body type: text/plain

Hello Mark and others,

I note from fishing around on the tapr ftp site that an apparent new version of the PacComm TNC for DSP93 firmware has been posted to the ~tapr/dsp93/upload section. It is called "b:tnc1211.zip" and the posting date is from early yesterday, 12/12. It unzips to a binary image file named "DSPTNC.B11"

There was no updated documentation file, and no message from Gwyn, so I can only assume that it fixes the reported bugs in the 11/25 version. I guess I'll find out tonight when I burn an EPROM from the image.

73,

Stan

---

### 31. Re: [DSP-93:1843] Another PacComm firmware revision posted (?)

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Wed, 13 Dec 1995 23:17:04 +0000  
To: dsp-93@tapr.org  
Message-ID: <199512132330.SAA06861@camel.campbell.edu>  
Rendered body type: text/plain

Hi Stan,

Great -- Could you keep us posted with your results?

By the way, I renamed the file tnc1211.zip. My FTP client can't deal with the "b:" in the filename, so I imagine others might have trouble too. Renaming of the file fixed that...

At 16:57 12/13/95 -0600, you wrote:

>

>Hello Mark and others,

>

>I note from fishing around on the tapr ftp site that an apparent new version of  
>the PacComm TNC for DSP93 firmware has been posted to the ~tapr/dsp93/upload  
>section. It is called "b:tnc1211.zip" and the posting date is from early  
>yesterday, 12/12. It unzips to a binary image file named "DSPTNC.B11"

>

>There was no updated documentation file, and no message from Gwyn, so I can  
only

>assume that it fixes the reported bugs in the 11/25 version. I guess I'll find  
>out tonight when I burn an EPROM from the image.

>

>73,

>

>Stan

>

>

>

Mark L. Hammond [KC4EBR]

---

### 32. TNC for DSP-93 code release

From: gwyn@paccomm.com (Gwyn Reedy, W1BEL)  
Date: Wed, 13 Dec 95 18:26:33 UTC  
To: dsp-93@tapr.org  
Message-ID: <11911@paccomm.com>  
Rendered body type: text/plain

Yes, I uploaded a new code release yesterday. Am still working on the documentation to upload.

Basic changes from previous release is that the DSP LOAD port will operate at 19.2 and is defaulted to 19.2. Still no KISS. Soon...

Gwyn

-----  
Gwyn Reedy, W1BEL                      gwyn@paccomm.com                      W1BEL@amsat.org

PacComm Packet Radio Systems, Inc.                      +(813) 874-2980 Fax: +(813) 872-8696  
4413 N. Hesperides St.                      BBS: +(813) 874-3078 (V.34)  
Tampa, FL 33614-7618 USA                      info@paccomm.com      http://www.paccomm.com/info

---

### 33. Re: [DSP-93:1841] Re: FSK modems

From: fperkins@onramp.net  
Date: Wed, 13 Dec 1995 19:51:16 -0600  
To: dsp-93@tapr.org  
Message-ID: <199512140151.TAA23279@mailhost.onramp.net>  
Rendered body type: text/plain

Hi Dave,

The "K" versions of the FSK modem were developed for the K0-23/ICOM X75 combo. Have you tried the "U" versions? The LED's tell the story. If the light is hopping much between the LEDs, you won't get good results.



Please see Ron's comment re the signal level.

Let us know if the "U" versions do better for you.

73 Frank WB5IPM

---

### 34. Re: [DSP-93:1845] TNC for DSP-93 code release

From: wb5aaa@wb5aaa.usl.edu (Jim Barron)  
Date: Wed, 13 Dec 95 20:13:54 cst  
To: dsp-93@tapr.org  
Message-ID: <5988@wb5aaa.usl.edu>  
Rendered body type: text/plain

wGwyn , why not put everything into getting the KISS working  
can't do much with this TNC without KISS.....

---

### 35. Re: [DSP-93:1847] Re: TNC for DSP-93 code release

From: quad pugh <quad@dns1.net-connect.net>  
Date: Thu, 14 Dec 1995 19:52:24 +0000  
To: dsp-93@tapr.org  
Message-ID: <199512141150.FAA25386@dns1.net-connect.net>  
Rendered body type: text/plain

At 08:24 PM 12/13/95 -0600, you wrote:

>  
> wGwyn , why not put everything into getting the KISS working  
> can't do much with this TNC without KISS.....  
>  
>go get em 73! nick

---

### 36. Kantronics data engine

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Thu, 14 Dec 1995 11:20:35 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130500acf5ff0e251e@[204.181.160.94]>  
Rendered body type: text/plain

I received this reply on K0-23 regarding interfacing the Kantronics data engine to the DSP-93. I am posting it here for archiving.

Ron

From: GW6KZZ  
To: W5RKN LU7PB  
Subject: Re: DSP-93+DATA ENGINE  
Keywords: reply

-----  
To : W5RKN  
From: GW6KZZ  
Time: 130750UTC  
Date: 14 Dec 1995  
-----  
Hello Ron, Alfonso

>On TNC-2 clones, a simple 5 wire connection to the Modem Disconnect  
>Header is all that is required. We use the following connections:  
>1 DCD  
>5 PTT  
>15 Ground  
>17 Rx data  
>19 Tx data

Ok the Data Engine the internal header is as follows:-  
1&19 Ground  
9 DCD  
3 Tx Data  
4 Rx Data

The PTT is routed from the Data Engine main board via the Plug in Board to the 15 pin socket on the rear, you can then route the remaining pins on the internal header through the Plug in board to the 15 socket too. This should allow the exchange of data between the DSP and DE upto 56KB.

One bit of advice I would also give is increase the Data Engine Ram to



I keep my discriminator centered 01-2 kHz during a pass. BTW, I think YAESUs have an FM wide and an FM narrow selection. 'Seem to remember someone reporting that the wide setting worked better ...

Also, I think I saw an article in a recent AMSAT newsletter on using YAESUs with the DSP-93 and other modems. 'Think it was the last one.

I am afraid I have lost track of your phone # again. Please advise on your next e-mail.

73 Frank WB5IPM

---

### 39. Re: [DSP-93:1851] Re: KO-23 modems

From: dmedley@ix.netcom.com (David Medley)  
Date: Sun, 17 Dec 1995 08:14:01 -0800  
To: dsp-93@tapr.org  
Message-ID: <199512171614.IAA25763@ix5.ix.netcom.com>  
Rendered body type: text/plain

Hi Frank and thanks. My phone is 520 297 4463.  
Is very cold this morning - mid 30s - my shack is not heated- Brrrr  
Dave

---

### 40. Re: KO-23 modems

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Sun, 17 Dec 1995 16:49:40 +0000  
To: dsp-93@tapr.org  
Message-ID: <199512171704.MAA10554@camel.campbell.edu>  
Rendered body type: text/plain

Hi Dave,

Keep in mind that our downloads will also depend on our antennas, QTH, etc. I have a rather impotent 435MHz antenna and LOTS of trees. Add to that living down in a pretty big "dip" in the terrain, and I find that 700K is about maximum on an excellent pass for me. "Typical" is in the 400-600K range. I do, however, see WISP reporting 99% download efficiency when the bird is above the trees, so that is my indicator that modems are doing just dandy.

Just some more food for thought. Some things are obvious, but I thought I would let you hear what some of us have to live with...(until my three kids get married and/or move away, then I can afford to get the 100' tower I need...let's see, my oldest is 4.5yrs...only about 20 more years to wait ;-)

At 23:38 12/16/95 -0600, you wrote:

>Hi,

>

>On a pass of 35 deg or more, I typically get 750-1050 K downloaded (unless  
>its been raining hard and my antennas are really wet). Ron and Roy report  
>lots of passes 700 K plus, so I think you should consider 700 K a typical  
>minimum. When things are right, pass to pass performance should be fairly  
>stable.

//

>73 Frank WB5IPM

>

>

>

Mark L. Hammond [KC4EBR]

---

### 41. DSP-93 For Sale

From: "Manuel A. Maseda" <mmaseda@Packet.Net>  
Date: Tue, 19 Dec 1995 07:27:59 -0500  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BACDE3.9C4137A0@clw006.packet.net>  
Rendered body type: text/plain

I have a newly built DSP-93 for sale. It is from the last batch of kits.  
\$400 shipped (48 states)

Manuel WF1J

mmaseda@packet.net

---

### 42. Re: [DSP-93:1854] DSP-93 For Sale

From: frank wesley <fdw@hal-pc.org>  
Date: Thu, 21 Dec 1995 19:12:21 -0600  
To: dsp-93@tapr.org, dsp-93@tapr.org  
Message-ID: <199512220112.TAA05210@hal-pc.org>  
Rendered body type: text/plain

At 06:39 AM 12/19/95 -0600, Manuel A. Maseda wrote:  
>  
>----- =\_NextPart\_000\_01BACDE3.9C4A5F60  
>Content-Type: text/plain; charset="us-ascii"  
>Content-Transfer-Encoding: 7bit  
>  
>I have a newly built DSP-93 for sale. It is from the last batch of kits.  
>\$400 shipped (48 states)  
>  
>Manuel WF1J  
>  
>mmaseda@packet.net  
>  
>----- =\_NextPart\_000\_01BACDE3.9C4A5F60  
>Content-Type: application/ms-tnef  
>Content-Transfer-Encoding: base64  
>  
>eJ8+IiUuMaQCAAEAAAAAAAAABAAEAAQeQBGAIAAAASAAAAAAAAADoAAEngAQAAgAAAAIAAgABBJAG  
>AAgBAAABAAAAADAAAAAADAAAAACwAPDgAAAAACAf8PAQAAAD0AAAAAAAAAGSsfpl6jEBmdbgDd  
>AQ9UAgAAAAABkc3AtOTNAdGFwci5vcmcAU01UUABkc3AtOTNAdGFwci5vcmcAAAAAHgACMAEAAAAF  
>AAAAU01UUAAAAAeAAmWAAQAAABAAAABkc3AtOTNAdGFwci5vcmcAAwAVDAEAAAAADAP4PBgAAAB4A  
>ATABAAAAEgAAACdkc3AtOTNAdGFwci5vcmcnAAAAAgELMAEAAAAVAAAAU01UUDpEU1AtOTNAVEFQ  
>U15PUkcAAAAAAwAAOQAAAAALAE6AQAAAAIB9g8BAAAAABAAAAAAMRKQEIgAcAGAAAAELQTS5N  
>aWNYb3NvZnQgTWpbc30b3RlADEIAQSAQAQAAAAARFNQLTkzIEZvcjBTYWxlAGWEAQWAAwAOAAAA  
>ywcMABMABwAbADsAAgBQAQEggAMADgAAAMsHDAATAACAGQAtAAIAQAEBYBACEAAAAAwNkM3N0Y2  
>OUQ2MzldrjExOTF0ODQ0NDU1MzU0MDAwMADkBgEDkAYAcAIAABIAAAALACMAAAAAAAMAJgAAAAAA  
>CwApAAAAAADADYAAAAAAEAAOQCgVfKfUDc66AR4AcAABAAAAEAAAAERTUC05MyBGb3Igu2FsZQAC  
>AXEAAQAAABYAAAAABus4Nbpppf8cH0dYRz5HIREVTVAaaaaAeAB4MAQAAAAUAAABTTVRQAAAAAB4A  
>HwwBAAAAEwAAAG1tYXNlZGFACGFja2V0Lm5ldAAAAwAGE018mFEDAACQZwAAAB4ACBAAAAAZQAA  
>AElIQVZFQU5FV0xZQ1VJTFREU1AtOTNGT1JtQUxFSVRJU0ZST01USEVMQVNUKfUQ0hPrktJVFmk  
>NDAwU0hJUFBRcG00FNUQVRfUy1NQUSVRUxXRjFktU1BU0VEQUBQQUUNLRVQAAAAAgEJEAEAAAAE  
>AQAAAAEAAHMBAAABMWkZ1ZzblJf8ACgEPahUCqAXrAoMAUALyCQIAY2gKwHnlDI3BgAGwwKDMgPF  
>AgBwckJxFeJzdGVtAoMz9wLkBXMcGh0KgAjPCdkCgAcKgQ2xC2BuZzEwM48UUAsKFFEL8SBJBGA  
>QHZl1GEGbgfQbDB5IGJ1AxAFQERTYfAtOTMgAhAFwHPxB0B1LiAZUAVABAAbEPEDYSB0aBmwC2AT  
>wBPABGF0EXAgb2YgaxBpdHMuCoUKNDAPGUBZaAUgcAmAICicNDgbUAGQE9BzKQqFHQqFTQBwCLAD  
>IFdGMRpKH+xtAMARsGRhQKKsGNrEcAuGfB0CoUFFTEAJCADABAAAAAAMERAAAAAAQAAHMKCD  
>JB8NzroBQAAMKCDJB8NzroBHGA9AAEAAAAABAAAAAAAGCN  
>  
>----- =\_NextPart\_000\_01BACDE3.9C4A5F60--  
>Do you troubleshoot assembled DSP93 kits?  
>  
>  
Name: Frank Wesley  
E-Mail: f@hal-pc.org

---

### 43. RE: [DSP-93:1855] Re: DSP-93 For Sale

From: "Manuel A. Maseda" <mmaseda@Packet.Net>  
Date: Thu, 21 Dec 1995 21:31:48 -0500  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BACFEB.BF65E460@clw003.packet.net>  
Rendered body type: text/plain

Frank,

No I don't.

73 and Merry Christmas  
Manuel WF1J

---

### 44. Still Have DSP-93 For Sale

From: "Manuel A. Maseda" <mmaseda@Packet.Net>  
Date: Sun, 24 Dec 1995 08:51:21 -0500  
To: "'dsp-93@tapr.org'" <dsp-93@tapr.org>  
Message-ID: <01BAD1DD.00C380A0@clw009.packet.net>  
Rendered body type: text/plain

I still have a newly built DSP-93 for sale. It is from the last batch of kits.  
\$400 shipped (48 states)

Manuel WF1J

mmaseda@packet.net

#### 45. frank wesley, where are you

From: w5rkn@amsat.org (Ronald G. Parsons)  
Date: Wed, 27 Dec 1995 06:39:54 -0600  
To: dsp-93@tapr.org  
Message-ID: <v02130502ad06eebd268d@[204.251.33.18]>  
Rendered body type: text/plain

Frank,

The e-mail address I have used for you is no longer working: <f@hal-pc.org>

Please send your correct address for DSP-93 questions.

Ron W5RKN

also:  
rparsons@bga.com

---

#### 46. Re: [DSP-93:1858] frank wesley, where are you

From: frank wesley <fdw@hal-pc.org>  
Date: Wed, 27 Dec 1995 11:24:48 -0600  
To: dsp-93@tapr.org, dsp-93@tapr.org  
Message-ID: <199512271724.LAA09560@hal-pc.org>  
Rendered body type: text/plain

At 06:53 AM 12/27/95 -0600, Ronald G. Parsons wrote:

>Frank,

>

>The e-mail address I have used for you is no longer working: <f@hal-pc.org>

>

>Please send your correct address for DSP-93 questions.

>

>

>Ron W5RKN

>

>also:

>rparsons@bga.com

>THE NEW E-MAIL ADDRESS IS FDW@HAL-PC.ORG

>

>

>

Name: Frank Wesley

E-Mail: f@hal-pc.org

---

#### 47. finally back!!

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Thu, 28 Dec 1995 17:25:01 +0000  
To: dsp-93@tapr.org  
Message-ID: <199512281744.MAA05620@camel.campbell.edu>  
Rendered body type: text/plain

Hello All,

I have just gotten connected from a 10 day internet outage at our site....ugh.

Anyhow, I'll try to catch up with the threads. It appears that I have not been dropped from the list, thankfully.

Good to be back online...

Mark L. Hammond [KC4EBR]

---

#### 48. PacComm TNC + KISS mode?

From: "Mark L. Hammond" <hammond@camel.campbell.edu>  
Date: Thu, 28 Dec 1995 21:21:11 +0000  
To: dsp-93@tapr.org  
Message-ID: <199512282139.QAA13169@camel.campbell.edu>  
Rendered body type: text/plain

Hi all,

Since I have been offline for the past 2 weeks, does anybody have any information about the EPROMS with KISS for the PacComm TNC for DSP-93? Guess that is the only thing I wanted for Christmas that Santa didn't bring me....

Thanks,

Mark L. Hammond [KC4EBR]

---

#### 49. Re: [DSP-93:1861] PacComm TNC + KISS mode?

From: Dave Lamont <diamont@central.co.nz>  
Date: Fri, 29 Dec 1995 02:53:46 +0000  
To: dsp-93@tapr.org  
Message-ID: <30E3583A.4E4C@central.co.nz>  
Rendered body type: text/plain

Mark L. Hammond wrote:

>  
> Hi all,  
>  
> Since I have been offline for the past 2 weeks, does anybody have any  
> information about the  
> EPROMS with KISS for the PacComm TNC for DSP-93? Guess that is the only  
> thing I wanted for Christmas that Santa didn't bring me....  
>  
> Thanks,  
>  
> Mark L. Hammond [KC4EBR] Dont give up Mark, or so Stan Salek tells me.

Maybe next Xmas Santa or Paccomm will oblige

Dave lamont ZL2AMD

--

Kind Regards

Dave Lamont

|                       |                            |
|-----------------------|----------------------------|
| Amateur Packet Radio: | zl2amd @ zl2amd.#40.nzl.oc |
| Internet:             | diamont@central.co.nz      |
| Maidenhead Locator:   | RF80kl                     |
| Telephone:            | voice 64-6-844-9117        |
|                       | fax 64-6-843-2953          |

|          |                  |
|----------|------------------|
| Address: | 510 Kennedy Road |
|          | Napier           |
|          | New Zealand 4001 |

---

#### 50. Re: [DSP-93:1861] PacComm TNC + KISS mode?

From: ssalek@h-e.com  
Date: Fri, 29 Dec 95 10:36:21 PDT  
To: dsp-93@tapr.org, hammond@camel.campbell.edu (Mark L. Hammond)  
Message-ID: <00000197.sm@h-e.com>  
Rendered body type: text/plain

Hello Mark and everyone--

>Since I have been offline for the past 2 weeks, does anybody have any  
information about the  
>EPROMS with KISS for the PacComm TNC for DSP-93?

Nothing's been posted since the 12/11 release. I made an EPROM for that one, but it still doesn't have KISS. I'm still waiting for PacComm to explain how to connect or bypass the handshaking on the DSP93 serial connector to get the PASSTHRU mode working. Gwynn promised that he would post some additional documentation to support the 12/11 release, but that didn't happen yet. The PASSTHRU DIP header connector doesn't show up on the circuit diagram supplied with the TNC board, and I haven't had the time to take it all apart again and trace the wires. I understand that Dave in NZ has tried to get PASSTHRU working by bypassing the handshaking, but without great success. He says that the data goes out of sync on anything but the shortest downloads through PASSTHRU into the DSP93.

Gwynn, how about giving us an update??

73 and Happy New Year,

Stan  
KD6CVL

---

#### 51. Re: [DSP-93:1863] Re: PacComm TNC + KISS mode?

From: Dave Lamont <dlamont@central.co.nz>  
Date: Fri, 29 Dec 1995 21:23:05 +0000  
To: dsp-93@tapr.org  
Message-ID: <30E45C39.2319@central.co.nz>  
Rendered body type: text/plain

ssalek@h-e.com wrote:

>  
> Hello Mark and everyone--  
>  
> >Since I have been offline for the past 2 weeks, does anybody have any  
> information about the  
> >EPROMS with KISS for the PacComm TNC for DSP-93?  
>  
> Nothing's been posted since the 12/11 release. I made an EPROM for that one,  
> but it still doesn't have KISS. I'm still waiting for PacComm to explain how to  
> connect or bypass the handshaking on the DSP93 serial connector to get the  
> PASSTHRU mode working. Gwynn promised that he would post some additional  
> documentation to support the 12/11 release, but that didn't happen yet. The  
> PASSTHRU DIP header connector doesn't show up on the circuit diagram supplied  
> with the TNC board, and I haven't had the time to take it all apart again and  
> trace the wires. I understand that Dave in NZ has tried to get PASSTHRU working  
> by bypassing the handshaking, but without great success. He says that the data  
> goes out of sync on anything but the shortest downloads through PASSTHRU into  
> the DSP93.  
>  
> Gwynn, how about giving us an update??  
>  
> 73 and Happy New Year,  
>  
> Stan  
> KD6CVL

Hi Stan and ALL

The Paccomm header from the TNC carries Txd, Rxd, and Ground.  
i.e. a standard 3 wire connection.

The RTS and CTS and other pins on the DSP93 Uart are left open cct.

I jumpered the Paccomm header to emulate the conditions the level  
changing chip produces.

With or without these changes it is impossible to load the DSP93  
with the DSPLoad command due as you say to out of synch uart transfers.

--  
Kind Regards

Dave Lamont

|                       |                            |
|-----------------------|----------------------------|
| Amateur Packet Radio: | z12amd @ z12amd.#40.nz1.oc |
| Internet:             | dlamont@central.co.nz      |
| Maidenhead Locator:   | RF80k1                     |
| Telephone:            | voice 64-6-844-9117        |
|                       | fax 64-6-843-2953          |
| Address:              | 510 Kennedy Road           |
|                       | Napier                     |
|                       | New Zealand 4001           |

---

## 52. RE: [DSP-93:1831] Re: yes=>Re: TNC/93 on 9600 Packet

From: "Bob Smith" <bsmith@msn.com>  
Date: Wed, 13 Dec 95 01:43:28 UT  
To: dsp-93@tapr.org, "Roy Welch" <rdw@crl.com>  
Message-ID: <UPMAIL01.199512300911110853@msn.com>  
Rendered body type: text/plain

Hi, one last question and thanks for the responses:

Before I do surgery, I will say that in addition to the solid DCD light I was  
getting good throughput by using my PK900 as the TNC - does this make a  
difference?

I may go back to that...

Thanks.

-----  
From: dsp-93@tapr.org on behalf of Roy Welch  
Sent: Sunday, December 10, 1995 11:16 PM  
To: dsp-93@tapr.org  
Subject: [DSP-93:1831] Re: yes=>Re: TNC/93 on 9600 Packet

No the solid DCD light will not show up the pulse bias. You have to look at the audio input to the DSP93 with a scope to see the shift caused by the pulse. However changing out the 10Mf input cap in the DSP93 to a 2Mf will cure the problem if that is the problem.

On Sun, 10 Dec 1995, Bob Smith wrote:

> Sorry, been out - I do get solid DCD lights on recvd data - does this make a

> difference?

>

> -----

> From: dsp-93@tapr.org on behalf of Mark L. Hammond

> Sent: Tuesday, November 28, 1995 7:39 AM

> To: dsp-93@tapr.org

> Subject: [DSP-93:1807] Re: yes=>Re: TNC/93 on 9600 Packet

>

> Hi Roy, and thanks for your comments. Your experience was on my mind, and I

> had not yet dug thru the old mail files to find out exactly what you

> observed and how you fixed it.

>

> Bob, you might want to check this out.

>

> At 23:22 11/27/95 -0600, you wrote:

> >Mark, be sure that he isn't suffering from the same simplex problem I had.

> >My radio created a DC pulse bias on the data switching from xmit to rcv

> >which masked the reply from the local 9600 node. The DC blocking

> >capacitor on the input stretches this pulse. He might try changing the

> >10 Mf cap on the audio input to the DSP93 to a 3 Mf and check again. I

> >have one radio port with a 3 mf and the other one with the stock 10 Mf.

> >

> >This problem doesn't exist on satellite operation for me.

> >

> >73, Roy

> >

> >

> >

> >

> >

> Mark L. Hammond [KC4EBR]

>

>

>